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REGIONAL PLANNING PROCESS AND THEORY BIBLIOGRAPHY

Robert G. Dyck, Ph.D.

and

Members of the Regional Planning Process & Theory Seminar, Fall 1973

Program in Urban and Regional Planning

Division of Environmental and Urban Systems

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INTRODUCTION

This bibliography is comprised of readings for EUS compiled by Professor Robert G. Dyck, Chairman, Program in Urban and Regional Planning, VPI & SU and (in the locational economics section) by Professor Richard Gustely, together with annotated listings by masters degree planning students in the following categories:

- I. Geographic, Resource-based, Growth Economics
Approaches to Regional Development
- II. Political and Administrative Approaches
- III. Locational Economics
- IV. Environmental Approaches
- V. Transportation--Communications Approaches

I. Geographic, Resource-based, Growth Economics Approaches to Regional Development

1. Friedmann, John and William Alonso (eds.). Regional Development and Planning, Cambridge: MIT Press, 1964.
2. Mackaye, Benton. The New Exploration: A Philosophy of Regional Planning, Urbana: University of Illinois Press (paper), 1962.
3. Morrill, Richard L. The Spatial Organization of Society, Belmont, California: Duxbury Press (paper), 1970.
4. Rodwin, Lloyd. Nations and Cities, Boston: Houghton Mifflin Co. (paper), 1970.
5. Rostow, W. W. Politics and the Stages of Growth, London: Cambridge University Press (paper), 1971.

II. Political and Administrative Approaches

1. Campbell, Alan K. (ed.). The States and the Urban Crisis, Englewood Cliffs: Prentice-Hall (paper), 1970.
2. Elazar, Daniel J. American Federalism: A View from the States, New York: Thomas Y. Crowell (paper), 1966.
3. Martin, Roscoe C. The Cities and the Federal System, New York: Atherton, 1965.
4. Sundquist, James L. and David W. Davis. Making Federalism Work, Washington, D.C.: The Brookings Institution (paper), 1969.
5. Tugwell, Rexford G. Introduction to a Constitution for a United Republic of America, Center for Study of Democratic Institutions, Santa Barbara, California: Center Magazine, (September-October 1970).

III. Locational Economics (Dr. Richard Gustely)

A. Business Location

1. Hoover, Edgar M. An Introduction to Regional Economics, New York: Knopf, 1971, Chapter 7.
2. Moses, L. and H. Williamson. "The Location of Economic Activity in Cities," American Economic Review, May 1967, pp. 211-222.

B. Residential Location

1. Hoover, Chapter 7.
2. Kain, J. F. "The Journey to Work as a Determinant of Residential Location," Papers of the Regional Science Association (1962), pp. 137-160; also in Page and Seyfried, eds., Urban Analysis, Chicago: Scott, Foresman & Co., 1970.

C. General Location Theory

1. Alonso, W. "A Theory of the Urban Land Market," Papers of the Regional Science Association (1960), pp. 149-151; also in Leahy, McKee and Dean (eds.), Urban Economics, Free Press, New York, 1970.
2. Friedman, John and William Alonso (eds.). Regional Development Planning, Cambridge: MIT Press, 1964, Chapters 4-7.
3. Hoover, Chapter 5.

IV. Environmental Approaches

1. Godschalk, David R. The Greening of Public Policy: Planning the Natural Environment, Special Issue, Journal of the American Institute of Planners, 37, 4, July 1971.
2. McHarg, Ian. Design with Nature, New York: Doubleday (paper), 1969.
3. Perloff, Harvey S. (ed.). The Quality of the Urban Environment, Washington, D.C.: Resources for the Future (paper), 1969.

V. Transportation-Communications Approaches

1. Creighton, Roger L. Urban Transportation Planning, Urbana: University of Illinois Press, 1970.
2. Meier, Richard L. A Communications Theory of Urban Growth, Cambridge: MIT Press, 1964.
3. Webber, Melvin M. (ed.). Explorations into Urban Structure, Philadelphia: University of Pennsylvania Press, 1964.

I. Geographic, Resource-Based, Growth Economics Approaches

A. Listings by Robert L. Brown:

Water Reuse Systems Analysis. BRUCE A. BISHOP & DAVID W. HENDRICKS, Journal of the Sanitary Engineering Division, ASCE, 97(SA1), Proc. Paper 7898, 1971, pp. 41-57.

Quantity - quality availabilities and requirements are part of the system description to be considered in the solution based upon an origin-designation matrix. When tertiary treatment and desalting plants and blending are included in the matrix, plant capacities can be obtained for any year of projected demand. Entries in the matrix must include the unit cost of delivering water having a specified quality from each origin to each destination; these costs include both transport and treatment costs. Least cost allocation solution is obtained by the transportation problem algorithm. The procedure was demonstrated by a cursory case study of the Salt Lake City region, an agro-urban-industrial area. Least cost results for 1965, 1980, 2000 and 2020 levels of demand showed a changing pattern of allocation. For 1965 demand levels surface and groundwater supplies were sent directly to municipal and agricultural uses with effluents to system outflow. By 1980 tertiary treatment enters the picture and by 2020 desalting becomes important. For 2020 all surface and groundwater goes to blending to combine with output from tertiary treatment and desalting plants.

A Methodology Study to Develop Evaluation Criteria for Wild and Science Rivers; Report of Water for Municipal and Industrial Use Subproject. FRED J. WATTS, Idaho University, Moscow, Water Resources Research Institute, W71-05704, CWRR-B-014-IDA (2), 1970, 46p.

Designation of the Middle Fork of the Salmon River as an instant wild river raised the question of whether or not the river could be maintained in a scenic and free-flowing state without endangering present and future water needs of communities, industries and agriculture in Idaho. This report determines present water needs for municipal, rural and industrial use in the state. For this purpose, Idaho is divided into seven regions, Panhandle, Clearwater, Salmon, Southwest Idaho, Upper Snake No. 1 and Upper Snake No. 2. Many tables list water withdrawal needs for these regions. From these data, and illustrated in other tables, projections of industrial and non-industrial water use for future years are made. The author concludes that the Wild Rivers designation for the Middle Fork of the Salmon River will have no effect upon present and future use of water in the Salmon River hydrological area nor upon needs of the entire state.

Economics of Combining Distilled Seawater and Renovated Waste-Water as a New Source of Municipal Water Supply. J. W. PORTER & C. L. WEDDLE, Bechtel Corp., San Francisco, California, Research and Development Progress Report OSW-PR-617, paper copy available from SOD as IL 88:617, 1970, 110p.

A methodology for determining the preliminary economics of combining distilled seawater and renovated wastewater to serve as a new source of municipal water supply was investigated and the results are reported. A computational procedure for determining least-cost supply from this combined source and alternative single sources was developed and is documented. The feasibility of the computational procedure (a mathematical model) is tested by application by a hypothetical U.S. coastal city. Appendices to the report include a description of the standard linear programming model (LP-600) used, discussion of the network theory applied, listings of computer subroutines employed, verification of cost calculations and a list of cited references.

Toward the Year 1985: The Conversion of Land to Urban Use in New York State. D. J. ALLEE and others, Spec. Cornell Ser. N.Y. St. Coll. Agric., Cornell University, New York No. 8, 1970, 15p. appendices.

New York's agricultural industry, recreation and urbanization in the future forms one of a series of reports. Part I presents a general statement on past and current trends in resource use in rural New York, tries to identify and discusses changes up to 1985. Part II and the appendic report on an empirical study carried out specifically for this series of studies, focusing on 1985. Data were developed on the basis of 12 development regions established by the Office of Planning Coordination.

Procedure for Including a Timber Enterprise in a Programming Evaluation of River Basin Development, R. GREENHALGH & K. H. DAVIDSON, Agricultural Economics Research, 22(4), 1970, pp. 107-111.

Wood products are included as competing enterprises in a model used as an aid in evaluating the need for land and water resource development. Detailed land use was developed from secondary sources. Data for enterprise budgets were developed mainly from experience on publicly owned land. The river basins examined were found to be capable of meeting food and fibre needs for the next 50 years, although improved woodland management is necessary. An increase in woodland acreage is needed to meet wood product demands after 1980.

The Economic Basis for Models of the Housing Market. R. M. KIRWAN & D. B. MARTIN, Centre for Environmental Studies, London, CES WP62, 1970, 36pp., 14 refs. Price 20p.

Much modeling work concerned with the housing market has not indicated clearly the underlying economic assumptions: for example, there appears often to be confusion between supply and demand and between the complex of cause and effects. In this paper, the authors attempt to clarify some aspects of the economic approach to the analysis of the housing market, isolating different approaches and illustrating some of these by reference to recent major research studies. The paper concentrates on micro-analytic studies of the housing market with special emphasis on the spatial dimension, since the authors believe that this field is of great importance to the formulation of housing and land-use policy and because it has received insufficient attention in Britain. The authors conclude that the economic equilibrium model of the spatial market has the potential to offer useful insights into the structure of the housing market.

Some Equilibrium Models of Consumer Behavior. R. G. COLLEDGE, Economic Geography, 46 (2), Supp., 1970, pp. 417-424, Fig., 2 Tables, 39 Refs.

Types of equilibrium behavior characteristics of consumers are described: including Marshallian, Pavlovian, Freudian, Veblenian and spatially rational man. Different types of behavior produce different types of spatial equilibria; also, locational and marketing strategies of sellers will vary depending on how they perceive their consumers. A series of behavioral models with spatial equilibrium outputs are discussed, in some detail: a place-loyalty model; market-share models (single vector and Markov models); learning models, stochastic perceptual models. It is concluded that most equilibrium models can only be expected to explain a small part of the actual behavior of populations, and that more attention will likely have to be focused on nonequilibrium models, both of spatial behavior and of spatial systems.

Location Decisions of Small Firms. M. J. TAYLOR, Area, 2, 1970, pp. 51-54, fig., table, 9 refs.

The paper raises two issues drawn from a study of iron-foundry industry in the United Kingdom. It indicates the limits of the spatial margin to profitability set by Smith's criteria are too wide to be of value in analyzing location of individual firms and within very broad cost margins linkage cannot be regarded as resulting in a 'pull' to particular optimum locations.

Fundamental Properties of Loschian Spatial Demand. C. A. GANNON, Environment and Planning, 3(3), 1971, pp. 283-306, 5 figs., 5 refs.

Spatial demand is the aggregate demand expressed at a particular location, under given supply conditions, by a set of individual consumers whose locations are dispersed over a geographical market area. Although the concept of spatial demand has played a central role in location and spatial economics since its development by Losch and his incorporation of it into his model of spatial competitive equilibrium, a comprehensive rigorous characterization of spatial demand does not presently exist. Accordingly, the contribution of this paper is a quite general formulation of spatial demand and a rigorous specification and evaluation of some of its most important properties. Spatial demand is found to consist of two components; free spatial demand which corresponds to a situation in which a geographic market area of suppliers do not interact, and competitive spatial demand which corresponds to a situation in which they do. This distinction allows the derivation of conditions for, among other things, (1) existence of these two components, (2) continuity of the spatial demand function and its first derivative and (3) convexity or concavity of the spatial demand function. Such properties of spatial demand are basic to an evaluation of existence, stability and general nature of spatial competitive equilibrium.

Trends in Foreign Regional Development Programs and Implications for the United States. DAVID ARNAUDO & VICTOR ROTERUS, Land Economics, 47(1), 1971, pp. 75-79, 2 tables, 38 footnotes.

Regional planning in the United Kingdom, Canada, France, Italy and Belgium holds valuable lessons for the United States: direct financial incentives to industry in lagging regions; decentralized decision making; complete regionalization of country for planning reasons, more emphasis on urban social problems.

An Iterative Model for Generating Transportation Networks. WILLIAM R. BLACK, Geographical Analysis, 3(3), 1971, pp. 283-288, 2 figs., ref.

A link location model is proposed in which the likelihood of a transport link being constructed from place (i) to place (j) is a linear function of the distance from (i) to (j), the traffic potential at (j) and a measure of the angle at which this link would meet the preceding link. In a discriminant analysis of 200 constructed links and 1185 unconstructed links in the Maine rail network, this model correctly classified 80.6% of the links. Given the distribution of towns in Maine and the population of these towns, the growth of the rail network from Portland may be generated as a deterministic diffusion process using the link location model. One link is added at a time, with the constraint that the network must be a tree. Comparison of these results with the actual early growth of the Maine network is encouraging. Less successful, however, is an independent test generation for the early growth of Minnesota's rail network.

Location Trends of Specialists Services. R. K. SCHILLER,
Regional Studies, 5(1), 1971, pp. 1-10, 6 tables, 25 refs.

Evidence is precluded to show that specialist services in outer metro area around London are less centrally located than would be expected by current theory. High income, car ownership and population dispersal are suggested as the causes. It is argued that specialist services will tend to polarize in future between non central locations serving car based local consumers, and metro CBD's serving public transport based commuters, tourists and distant visitors.

A Method for Analyzing Patterns of Tourist Activity in a Large Rural Area. The Highlands and Islands of Scotland. M. R. CARTER, Regional Studies, 5(1), 1971, pp. 29-37, 3 figs., 9 refs.

The paper examines critically a method used to analyze the distribution of tourist activity in the Highlands and Islands of Scotland. Since the budget was small, it was necessary to obtain information by means of a questionnaire survey. The questionnaire was designed primarily to obtain information about two general indicators of distribution of tourist activity. The location of tourist person nights and the pattern of tourist traffic flows. Two main problems arose--to establish a suitable sampling frame to devise methods of analyzing the complex data obtained. The approach to solving these problems is described together with the main results.

A Benefit-Cost Analysis of a Regional Development Incentive: State Loans. GERALD W. SAZAMA, Journal of Regional Science, 10, (3), pp. 385-396, 2 tables, 9 refs.

Following a survey of previous studies of incentive programs, a method of benefit-cost appraisal of industrial incentive programs is presented. The key question posed is: Do state development incentives programs stimulate more income in the state than foregone opinions would suggest as a result of providing funds for the programs? The model is then used to evaluate industrial development loans in Pennsylvania, New York, Rhode Island, Maine and Connecticut, and the results indicate that such programs do indeed have a beneficial effect on their respective economics. However, because state loans frequently work with relatively low-wage firms, at times of full employment these programs could cause a reduction in state per capita income even though they stimulate an increase in total state income.

A Survey of Short-Term Changes in the Land-Use Mix of Three American Central Business Districts. DAVID C. WEAVER, Southeastern Geographer, 11, (1), 1971, pp. 52-61, fig., 3 tables, 12 refs.

This article represents the results of an investigation of land use trends in three cities in the U.S.A., Mobile, Alabama, Salt Lake City, Utah, and Tulsa, Oklahoma, 1952-1966. Selection of cities and research procedures are based on the Murphy-Vance studies of the American C.B.D. published 1954-1955. Data for the three cities from the 1955 study are compared with statistics compiled in the same manner for 1966. Land use trends exhibited by tabular and graphic presentation are discussed for individual cities and similarities in occurrences between cities are emphasized. Analysis of the data shows that there have been significant changes in the overall land use mix of the three business districts since 1952. Changes are broadly similar to recognized national trends in the patterns of retail sales volumes and of employment in offices and financial institutions in the city core during the same period.

Employment Location/Allocation Models; A Preliminary Investigation of Some Factors Underlying Employment Growth. A. J. PARKER, Uni. College London, Department of Geography Occasional Papers, 13, 1970, 40p., 4 figs., 25 refs., appendix.

The use of allocation/location models of employment growth in America and Britain is discussed and the problems of understanding the underlying relationships and calibration considered. The use of multiple regression techniques both to calibrate and reveal these underlying relationships is tested in the South Midlands context, an area of scheduled rapid population growth. The results show that certain factors, including unemployment, previously deemed important influences upon growth, in fact have little significance.

Research in Human Geography. MICHAEL CHISHOLM, (heinemann, London), 1971, 84p., 5 figs., 8 tables, 182 refs.

One of a series of reviews prepared for the Social Science Research Council and in conjunction with its Committee on Human Geography. The arrangement deals in turn with the identification of spatial patterns -- first static patterns, then dynamic patterns. The third main chapter discusses theories of spatial organization. Among particular problems are the variability of relationships with scale, the importance of setting work in a context of theory and hypothesis and of propositions that can be tested. In the past at least the greater contributions of British geography have been in the empirical and applied fields, rather than the development of theory. The two final chapters discuss

the organization and structure of research work and research needs and priorities. This last chapter discussed the quantitative and qualitative needs for research training, the need for limited technical assistance for staff research, and the identification of seven priority areas for research; perception studies, simulation models, forecasting, regional taxonomy, environmental standards, population and migration, and processes of regional economic and social development.

B. Listings by Julia Deal

Bunker, Raymond. Town and Country or City and Region? 1971, Australia: Melbourne University Press.

Discussion of general planning and regional planning. Emphasis and case studies on regional implications of planning for large cities (U.S., Great Britain, Australia).

Cheng-Siang Chen. "Population Growth and Urbanization in China, 1953-1970," Geographical Review, January 1973, pages 55-72, Newman Library GLG35 v. 63, No. 1.

Analysis of China's policies on population growth, urbanization and industrial decentralization; effects of policies on solving regionalization problems of urban and rural areas.

Chinitz, Benjamin, and Richard Dsansky. "The Patterns of Urbanization within Regions of the United States," Urban Studies, September 1972, pages. 289-298.

Examination of patterns of urban growth within nine regions of the U.S.: causation, interaction between regional and urban settlement patterns. Twentieth century data reviewed: urban-rural, metropolitan-non-metropolitan, numbers and average sizes of metropolitan areas. Influence of industrial mix on settlement patterns is analyzed in terms of relative importance of agricultural employment, both over time and between regions.

Commission on Population Growth and the American Future. Population and the American Future: Final Report. 1972, Washington, D.C.: U. S. Government Printing Office, pages 25-37.

Chapter 3: Population Distribution, pages 36 and 37: Specific discussion of urban regions and populations.

Dunham, David M., and Jos. G.M. Hilhorst, eds. Issues in Regional Planning, 1971, The Hague, The Netherlands: Institute of Social Sciences, Newman Library HT 391 I84.

A collection of papers from a 1970 seminar. 5 sections:
(1) Education for Regional Planning. Part of seminar purpose to integrate ideas of university staff with problems of regional development as experienced by government officials in the field; to work to solve problems of education in regional planning. (2) Regional Development and Planning: nature of processes of regionalism, using theory and case study. (3) Problems of Recognition: proving the need for regional planning and recognition of the profession. (4) Participation in Decision-Making: Examination of need for and barriers to increased popular participation; organizational structures and policies as they affect participation; case studies with models for inter-regional decision-making. (5) Administration of Regional Development: frameworks, methodologies.

Hansen, Niles M. Location Preferences, Migration, and Regional Growth: A Study of the South and Southwest United States, 1973, New York: Praeger Publishers, Newman Library, HT 392 H34.

The last of three related works on the integration of manpower and regional development policies, this book focuses on location preferences of persons in "lagging" regions with varying assumptions, plus their responsiveness to economic incentives, expectations of future residential location, and migration patterns from "lagging" areas to metropolitan areas. Chapter 1 - broad national setting for book; 2 - rationale for a national comprehensive relocation assistance program; 3 - nature and significance of location preference studies; 4 - reports on results of studies in eastern Kentucky, south Texas, southwestern Indian reservations, southwest Mississippi; 5 - analysis of migration patterns from lagging regions to metropolitan areas; 6 - conclusions.

Hoffman, George W. Regional Development Strategy in Southeast Europe: A Comparative Analysis of Albania, Bulgaria, Greece, Romania, and Yugoslavia, New York: Praeger Publishers, 1972.

Well-documented, supported by thorough field knowledge, this book uses an essentially historical approach examining the 20th century situation and analyzing the trends since World War II. Study highlights a universal conflict in regional planning - an economic rationale versus political expediency; conclusion is that regional development is a problem without a simple solution based solely on financial or parochial considerations.

Lavell, A. M. "Capital Investment and Regional Development in Mexico," Area, Vol. 5, No. 1, 1973, pages 54-57. Newman Library, G7A742, V. 5, No. 1.

The low level of demand for investment capital in peripheral regions of Mexico must be considered with problems of capital supply and demand in regional industrialization, if the imperfect spatial mobility of capital is to be understood. Capital investment will increase with entrepreneurs' understanding of development possibilities. Planning for investment decentralization must be seen holistically, not as a series of unrelated parts.

MacKaye, Benton. From Geography to Geotechnics, 1968, Urbana, Illinois: University of Illinois Press, Newman Library HT 392 M23.

This collection of essays includes most of his The New Exploration plus more current essays and articles. He includes essays on control of the landscape, and uses of the wilderness, and MacKaye's theory of the "townless highway".

MacKaye, Benton. The New Exploration: A Philosophy of Regional Planning, 1962, Urbana, Illinois: University of Illinois Press. Newman Library, GF 51 M3.

Romanticized discourse on urbanization, civilization, conservation, urban and regional planning. Written in 1928, not very useful to 1973 planners, except for historical interest. MacKaye for example, anticipates the current concern for ecology.

Manners, Gerald; David Keeble; Brian Rodger and Kenneth Warren. Regional Development in Britain, New York: Wiley, 1972.

Analysis of regional economic change, using modified functional "standard economic regions" of Britain. Changes due to consumerism and political intervention, so that regional policy is felt everywhere in Britain.

Oliver, J.D.; W. L. Gibson, Jr. "Shifts in Land Use in the Appalachian Region of Virginia," VPI & SU Research Division Bulletin, 1971.

Scott & Lee Counties, Virginia.

Development of model to explain changes in land use with variables: physical state of land, size of owned unit, location of owned unit, age and education of owner, days of non-farm work tenure and ownership arrangements. Changes in land use, 1958-66, were associated with physical state of land and availability of non-farm employment.

Preston, Richard E. "The Structure of Central Place Systems," Economic Geography, Vol. 47, No. 2, April 1971, pages 136-155.

Application of Christaller's model of central place theory. System of central places in the Pacific Northwest of the U.S. is identified and described; the relative size, class, and position in the area's central place structure is determined. Selected linkages are examined to indicate the pattern of functional interdependence between the places studied. This study supports the principal behavioral assumption underlying central place theory, the interdependence between centers in the provision of goods and services, and the existence of hierarchical class-systems of central places.

Scargill, D. I., ed. Problem Regions of Europe, 5 volumes: Clout, H.D., The Massif Central; Thompson, I. B., The Paris Basin; Warren, K., North East England; Mountjoy, A.B., The Mezzogiorno, Lawrence, G.R.P., Randstad, Holland, 1973, Oxford University Press.

Short (48 pages) treatment of each region; these five will be part of thirteen volumes when the study is completed. Clout - decay of agriculture and coal mining in mountain areas; development of tourism, forestry, and industry, Thompson - problems of Greater Paris, Warren - analysis of regional economic development in North-East England, based on statistical information, Mountjoy - agriculture versus industry and tourism in Southern Italy, Lawrence - expansion of urban areas in Holland with provision for recreational areas and preservation of landscape.

Schwind, Paul J. Migration and Regional Development in the United States, 1950-1960, 1971, Chicago: University of Chicago.

Study of effects of migration patterns in regional development. Hypothesis: Relative economic welfare of region is critical catalyst of U.S. migration. Finding: Migration reduces regional economic disparities, but it increases rural-urban differences.

Scott, Allen J. Combinatorial Programming, Spatial Analysis and Planning, 1971, London: Methuen and Company, Ltd. HT 166 S355 Architecture Library.

Survey of current combinatorial programming methods and their application in urban and regional analysis, with emphasis on spatial-structured problems. Requires and assumes prior knowledge of linear algebra and linear programming. General review of current problems in analysis and planning of realistic combinatorial systems in geographic space and review of principal methodologies for solving problems. Good bibliography.

Shabad, Theodore. China's Changing Map: National and Regional Development 1947-1971, 1972, Methuen.

Revised, updated version of author's 1956 book. Part I - physical environment, politico-administrative framework, processes of economic growth and geographic change. II - essential characteristics and trends in 16 regions, by provinces and autonomous regions.

Sundquist, James L. "Where Shall They Live?" The Public Interest, No. 18, Winter 1970, pages 88-100.

Discussion of U.S. population trends, particularly spatial distribution, with respect to regional balance and rural-urban balance. Plans and critiques for a population distribution policy and its importance to the U.S.

C. Listings of James L. Flannery

ARTICLES

Beckmann, Martin J. and John C. McPherson. "City Size Distribution in a Central Place Hierarchy," Journal of Regional Science, V. 10, No. 1, 1970, pp. 25-33.

The authors present a generalized urban hierarchy model, in complex mathematical form, describing city size in terms of the size of its supportive rural population. It is an application of central place theory with some variables that allow changes in technology to be at least partially accounted for. Its approach is rather technical and heavily math oriented but the verbal descriptions are useful in gaining a grasp of some basic, numerical center-periphery relationships. The authors conclude with a discussion of some extensions and alternative uses of the model. This represents an attempt to turn a highly theoretical regional-economic development model into a more practical tool for planning purposes.

Billings, R. Bruce. "Regional Defense Impact: A Case Study Comparison of Measurement Techniques," Journal of Regional Science, V. 10, No. 2, 1970, pp. 199-216.

This is a case study analyzing the impact of Defense Department spending in Arizona. The author explores the dependencies that have developed in the state and local governments upon defense monies. While the analysis is restricted to one state it is potentially applicable to all states and regions as well. The methodology used was to project the present state from past facts using first a rather complex Input/Output technique and then a simpler economic base study technique. Both performed equally well thus giving a practical edge to the easier economic base method. Over-all, this article recounts an application of regional economic growth theories.

Boote, R. E. "Conservation for Man," Journal of the Town Planning Institute, V. 56, No. 7, 1970, pp. 271-276.

The author first analyzes some topical questions related to regional growth and development such as, the population explosion, technological progress, increased mobility and tourism. He concludes that these are putting great amounts of pressure on our present patterns of land use. The various choices with regard to the location of population and resource utilization are considered. The author concludes that greater citizen participation is needed in the planning process as well as a greater understanding among the general public concerning conservation and ecology.

Cooper, Colin, Brandon Howell and Derek Lyddon. "Regional Planning and Implementation," Journal of the Town Planning Institute, V. 56, No. 8, 1970, pp. 325-331.

This article is the combination of three papers, each dealing with regional planning in Wales, Southeast England and Scotland. Each of these areas has done a significant amount of actualized regional planning and their findings are well worth noting. They conclude that; In order for regional planning to be most effective there needs to be a strong basis for compatibility among regions; Regional planning methodologies should be more standardized; and finally, better criteria need to be developed to delineate regions.

Darwent, D. F. "Growth Poles and Growth Centers in Regional Planning," Environment and Planning, V. 1, No. 1, 1969, pp. 5-32.

This article analyzes the concepts of growth poles and centers and evaluates their usefulness in terms of geographic and economic space. The author notes that there is a good deal of confusion among planners concerning the definitions of these two terms and proceeds to offer a highly technical explanation of each. It is concluded that Friedmann's "center-periphery" concept is extremely well researched and precise but more academic than practical in orientation. It is a good example of some of the conflicts and issues presently under debate in the regional development-economic growth field.

Gauthier, H. L. "Geography, Transportation and Regional Development," Economic Geography, V. 46, No. 4, 1970, pp. 612-619.

The author suggests some possible roles that the transportation system can play in regional development. The work tries to integrate the effects of both transportation and geographic limitations on regional development and economy. The methodological approach is in terms of Friedmann's center-periphery model.

Higgs, Robert. "Central Place Theory and Regional Urban Hierarchies: An Empirical Note," Journal of Regional Science, V. 10, No. 2, 1970, pp. 253-254.

Higgs suggests that central place theory is the only existent theory that can justify the existence of urban hierarchies in geographic space. He further notes the presence of such an urban network in the Prairie region west of the Mississippi River. H. Perloff and others have claimed central place theory is not adequate in explaining such hierarchies but Higgs proves his own case mathematically. This may largely be an academic squabble but it does add additional support to central place theory as an applied tool in regional planning.

Jones, Kenneth J., and C. Jones Wyatt. "Towards a Typology of American Cities," Journal of Regional Science, V. 10, No. 2, 1970, pp. 217-224.

The authors have developed and applied a computer program and factor analyzed selected American cities. Twelve indexes were used and two major factors emerged, "urban growth and development" and "socio-economic status." These produce four city categories: (1) high growth and high status; (2) high growth and low status; (3) low growth and high status; and (4) low growth and low status. The cities tested clustered in these categories according to regions with type 1 being the West and Southwest; type 2, Southern; type 3, North-central and East; and type 4, Northeast. The article is not overly technical, does not give the details of the computer program and offers some excellent insights into regional growth, development, stagnation and decay.

Sazama, Gerald W. "A Cost-Benefit Analysis of a Regional Development Incentive: State Loans," Journal of Regional Science, V. 10, No. 3, 1970, pp. 385-397.

This paper grew out of an uneasiness among some growth economists as to the short and long term effects of certain State level incentive programs which were designed to increase regional economic base stability. State loans are one such incentive method, and may be of the direct payment or loan guarantee variety. The author develops and applies a model for determining the costs and benefits involved and concludes that this type of incentive program, i.e., state industrial development loans for the private sector, are working. This article lends support to both the cost-benefit approach for a monitoring methodology and the state loan incentive program as a tool for regional development and economic base stabilizer.

Schwartz, Abe. "On Efficiency of Migration," The Journal of Human Resources, V. 6, No. 2, Spring 1971, pp. 193-205.

In a highly statistical and technical article the authors deal with questions surrounding human geography and the act of regional migration. Migration is never a one-way phenomena in that as people move from region A to region B some are likely to be moving from region B to A as well. The sum total of moves is regarded as the gross migration and the difference between the two is considered the net migration. That is, the net gain of one region and the net loss of the other. Traditionally, efficiency of migration, i.e., a high positive ratio of net to gross migration, has been viewed as desirable and lack of efficiency, undesirable. The author claims that this is too simplistic and notes that a ratio of zero indicates regional equalization, itself a positive goal. He goes on to note that this equalization may be in educational, economic or information factors.

Silvers, Arthur L. "The Structure of Community Income Circulation in an Incidence Multiplier of Development Planning," Journal of Regional Science, V. 10, No. 2, 1970, pp. 175-189.

This paper describes a matrix multiplier for estimating the impacts of public programs on specific income groups. Of particular interest is the impact on people with low incomes. The author describes the impact assessing multiplier, the basic data for which are readily available from published sources. This last point makes the technique very utilitarian. He concludes with some potential public policy implications. The methodology is very mathematical but the verbal clarifications are highly useful.

Steele, David. "Regional Planning and Infrastructure Investment Based on Examples from Turkey," Urban Studies, V. 8, No. 1, 1971, pp. 5-20.

The author deals with the often asserted hypothesis that industrial location decisions in underdeveloped countries can be affected by infrastructure investment. He concurs, but adds that the investments must often be substantial and well timed to be effective. If done properly, the long term benefits will far exceed the initial costs. He also emphasizes the need to concentrate regional investments as resources are always limited and not all regions are equally developable. Specific investments in transportation and power are analyzed as well as the possibility of developing "industrial Estates." The article is geographic in that it deals with methods for influencing locational decisions and thus regional growth and development. While the primary examples are Turkish, the basic tools discussed may be easily generalized to other developing countries.

Thomas, Brinley. "Economic and Social Planning in Wales,"
Journal of The Town Planning Institute, V. 58, No. 7, 1970,
pp. 262-263.

In a rather short article the author describes the transitional phase in Welsh planning from "regional planning" to "planning by the regions in the regions." He concludes that one of the main lessons to be learned is the need to achieve a proper balance between "planning from the bottom," i.e., with an emphasis on citizen participation and local control, and "planning from the top," i.e., highly centralized regional planning.

BOOKS

Osborne, R. H., ed., et. al. Geographical Essays in Honor of K. C. Edwards, Department of Geography, University of Nottingham, Derry and Sons Ltd., Nottingham, 1970.

This book is made up of a series of essays and articles submitted to honor the retirement of K. C. Edwards, one of the leading European students of urban geography. The entire work adds significantly to the field of urban and regional planning but four stand out in terms of regional developmental planning and the proper relationship between geographers and planners in general. They are:

- a. Collins, M. P. "The Role of Geographical Analysis in the Planning Process," pp. 140-148.

This essay examines some developments in the application of mathematical and statistical techniques to geographical analysis and assesses their future role in regional planning. The author notes that recent techniques have been moving geographers away from the "static state" analytical methods, traditionally their strongest tools, and towards the more fluid, time-series, predictive methods employed more frequently in the planning profession. The most significant steps taken by geographers to date in this new direction have been the conceptual models dealing with dynamic locational, travel and shopping decisions. The author sees a strong future for both geographers and geographic techniques in planning.

- b. Hoyle, E. S. "Transportation and Economic Growth in Developing Countries: The Case of East Africa," pp. 187-196.

This paper attempts to integrate the railroad network and port systems in East Africa with the overall transportation system and general economic development. Special attention is paid to the effect that transportation has had on the economic infrastructure of this developing country. It is concluded that the transportation factor is so vital to economic development that major regional-developmental planning should be practiced and that decisions in this area should not be left up to the discretion of local politicians.

- c. Powell, A. G. "The Geographer in Regional Planning," pp. 224-232.

The author reviews the evolution of geography from an academic discipline to an applied science. The application of geographical techniques has led to a greater understanding of environmental and spatial phenomena among planners. It has also underlined the importance of past trends and forces in projecting future events. The author then notes some specific geographic contributions to English planning and reviews the recent English legislative efforts that have strengthened the geographer's planning impact. He concludes that geography is at root a social science in that it is most vitally concerned with the people who inhabit geographic space, where they live, why they live there and what they do. Also, he feels that the geographer must be a co-equal in the planning process as he more than any other practitioner synthesizes the hard and soft science approaches with an emphasis on man.

- d. Smith, J. M. "The Erewash Valley Intermediate Area," pp. 80-87.

The Erewash Valley area was a region of declining economic activity near Nottingham, England. The central government designated the Valley as an Intermediate Area, one where a concentrated redevelopment effort would take place. The general nature of the region, its economic, population and communication structures as well as its growth potential are discussed in very practical terms. While this does deal with a foreign example it does afford an operational look at a set of regional redevelopment tools. These tools are largely in the form of inducements, subsidies and controls aimed at affecting industrial location decisions.

II. POLITICAL AND ADMINISTRATIVE APPROACHES

A. Listings by Pete Hipps

Zimmerman, Joseph F. "Direct State Action to Help Solve Metropolitan Problems," State Government, Vol. 44, No. 1, Winter 1971, pp. 37-41.

The author suggests that state governments have the primary responsibility and the necessary tools - legal, financial, resources, and determination - to solve area-wide problems. A multipurpose authority, rather than a single purpose authority, should be established with members appointed by the state government. State Governments are free to create the governmental machinery required without the necessity of obtaining voter approval. Recommendations for preventing the agency from becoming an autonomous political institution are also given.

Elazar, Daniel J. "The Resurge of Federalism," State Government, Vol. 43, No. 3, Summer 1973, pp. 166-173.

A discussion of Federalism and the pattern of political principles it is based on. Indicates that today's concern with Federalism is based on the recognition of two fundamental facts - that governmental activities must be shared by all levels of government to be effective and responsible to public needs and that it is possible for all governments to grow in power simultaneously. In concluding the author gives a forecast of the Federalism of the future.

Arrington, W. Russell and Richard E. Dunn. "Government Evolution and the Responses of State Legislatures," State Government, Vol. 43, No. 3, 1970, pp. 174-178.

This article attempts to show how the role of the State Government in the overall governmental structure has declined while the role of the central government has increased. The authors suggest that there were five periods of Federalism in the U.S., occurring between 1790 and 1970, and that in each period the Federal government has increased its obligations. Because of this, the states' power and influence have declined. However, in recent years, state legislatures have made vast changes in their operations and area of functional responsibility. These changes are discussed briefly.

Advisory Commission on Intergovernmental Relations. "A State Response to Urban Problems: Recent Experience Under the 'Buying-In' Approach," Washington, D.C.: U. S. Government Printing Office, December 1970.

This pamphlet reviews the extent to which state governments are "buying into" Federal-local grant-in-aid programs. The States' administrative involvement and technical assistance to local governments are also examined. The nature and objective of "buying in" and the implication for intergovernmental relation are discussed.

Advisory Commission on Intergovernmental Relations. "State Action on Local Problems - 1971," Washington, D.C.: U. S. Government Printing Office, April 1972.

This report provides a summary of the states constitutional and legislative actions during 1971 that were designed to strengthen their response to the needs of local governments and citizenry. States actions are summarized under five broad categories: Strengthening local government; Assistance in specific program areas; new and improved area-wide approaches; strengthening state and local fiscal resources; and state constitutional revisions.

Friskien, Francis. "The Metropolis and the Central City: Can One Government Unite Them," Urban Affairs Quarterly, Vol. 8, No. 4, June 1973, pp. 395-422.

"This paper examines recent proposals and innovations designed to stimulate coordinated metropolitan policy making in light of present urban and metropolitan trends. It accesses the extent to which current approaches to metropolitan political and administrative reform are adequate to the task of reconciling central-city needs and priorities with those of the metropolis." A case study of the Northwest Ohio Area-Wide Coordination Agency is given as an illustration.

Dillon, Conley H., ed. "A Symposium: Needs and Prospects for Research in Intergovernmental Relations," Public Administration Review, Vol. 30, No. 2, May/June 1970, pp. 264-276.

These articles explor the need and possibility for research in intergovernmental relations.

"The Setting," Conley H. Dillon.

A framework for the discussion of the need for intergovernmental research is set forth. The author suggests that as a result of the 90,000 local government units, the almost 500 federal grant-in-aid programs and the wide spread overlapping of federal, regional and state agencies, there is indeed a need for research efforts.

"Needs and Approaches," Robert C. Wood.

Discusses the need for operation research. This research is designed to provide answers to eliminate and guide the making of domestic policy. Author indicates that three areas should be given systematic examination: intergovernmental relations; program delivery; and institutional and technological matching.

"Response: Relevant Requirement," David B. Walker.

Emphasizes the need for relevant research into the field of intergovernmental relations. Suggest that the intergovernmental research should look at the system as an operational unity.

"Another Viewpoint," W. E. Hulcher.

Indicates two possible aspects of the research effort. One, to look for better ways to accomplish our governmental function within the general framework of the federal system as it is today. Second, to take a sharp look at our Federal System and make meaningful recommendations and adjustments. Author elaborates on possible funding for research in this area, the research scope, and possible questions that could and need to be answered.

"Response: New Aspects for Attention," Harold Seidman.

Seidman suggests that before we can have a meaningful understanding of the intergovernmental system, we must know who runs it. The operation of the professional guilds should be examined if we are to get to the root problems of the federal system today. Research should be of immediate value to the decision maker.

Committee for Economic Development. Reshaping Government in Metropolitan Areas, Washington, D.C.: U. S. Government Printing Office, 1970.

A short book that examines the overall trends and problems found in metropolitan areas and recommends possible solutions to these problems. Main emphasis is on reshaping the governments. The areas covered are (1) Introduction and Summary of Recommendation, (2) Metropolitan Problems, (3) Obstacles to the solution to metropolitan problems and (4) Reshaping metropolitan government. To solve some of the problems found in metropolitan areas such as education, housing, crimes, transportation, etc., it is suggested that an area-wide government be established. Also, a commentary level government should be established, in the form of "community-districts," to deal with local problems and to have some power over the functions of the area-wide government.

Mogulof, Melvin B. "The Federal Regional Councils: A Potential Instrument for Planning and Joint Action," Social Service Review, June 1970, pp. 132-146.

A brief description of the development of the Regional Councils, their goals, authority, representation, staffing and internal procedures, and their relationship to Washington, the local governments and other agencies. Although the Regional Council has no or limited authority, their main functions are the identification of conflicting agency policies and trying to strengthen problems through coordination and monitoring.

Bibler, R. Alan. "COG's vs. Choas," The American City, Vol. 85, September 1970, p. 94.

This article reviews the problems found in local governments and their inability to perform area-wide functions effectively. The reasons given for ineffective governments are fragmentation and overlapping of governmental units, disparities between tax boundaries, state constitution and statutory restrictions, and metropolitan areas overlapping state boundaries. The author discusses COG's functions and future in metropolitan governments.

B. Listings by Sally E. Sweetser

Beecroft, Eric. "Regional Government and Conservation," Journal of Soil and Water Conservation, V. 26, No. 2, March-April 1971, pp. 66-69.

Maintains that regional government is the most effective form of government for conservation. Must be a strong multi-purpose type with legislated powers. Reviews Ontario Water Resources Commission, Grand River Conservation Authority and the Royal Commission on Local Government (the Wheatley Commission). Emphasizes accountability of regional government to citizens.

Abbott, John W., ed. Democracy in the Space Age, San Francisco: California Tomorrow, 1973.

A plan created by California Tomorrow for regional government in California. The focus is state-wide rather than metropolitan. The concept divides California into 10 regions based on population. This would create another layer of multi-purpose government. It would facilitate the response of government to regional problems while maintaining local government and local control. Emphasis on planning, environmental control and citizen participation.

Booth, Daniel A. Metropolitics: The Nashville Consolidation, East Lansing: Institute for Community Development and Services, University of Michigan, 1963.

Case study of the issues and actors in the proposal for consolidation of Nashville and Davidson County. Compares the situation in 1958 when the proposal was defeated to 1962 when it passed. Offers some how-to hints for those working for change in other metropolitan areas.

Greer, Scott. Governing the Metropolis, New York: John Wiley and Sons, Inc., 1962.

Analysis of the process of metropolitanization and its political system. Reviews the conflicts between the central city and the suburbs, and their differing political styles. Reviews the problems of a fragmented political structure and the basis for unification. Explores alternatives to multi-purpose metropolitan government and the future of the metropolity.

Greer, Scott. Metropolitics: A Study of Political Culture, New York: John Wiley and Sons, Inc., 1963.

Studies the dynamics of change in the movement to re-structure government specifically with regards to a move to create a metropolitan government in St. Louis. Explores the issues and strategies involved. Identifies the actors for and against by determining who gains from the "crusade," or the establishment of a metro government, or from maintaining the status quo. The author presents the issues as a continuation in the on-going saga of the fight for good government.

Le Blanc, Hugh, and D. Trudeau Allensworth. The Politics of States and Urban Communities, New York: Harper and Row, 1971.

Especially Chapters 9 and 10 which cover metropolitan government. Gives a discussion of the "metropolitanists" who they are and why they are opting for metropolitan government, and the "decentralizationists," their opponents. Covers the various metropolitan reorganization strategies from informal agreements to federation. Good general overview of the argument and means of metropolitan government.

National Service to Regional Councils. Regionalism: A New Dimension in Local Government and Intergovernmental Relations, Washington, D.C.: National Service to Regional Councils, 1970.

Analyzes the regional council approach to local government problems which cross political jurisdictional boundaries. Traces the need for a regional approach and the development of regional councils as a politically feasible approach to area-wide problems. Discusses the types of regional council organizations, federal incentives for their development, funding sources, representation and voting systems, programs and accomplishments, the role of the states, and basic issues now facing the councils.

Scott, Stanley and Harriet Nathan, ed. Adapting Government to Regional Needs, Berkeley: Institute of Governmental Studies, University of California, 1971.

This is the report of the Conference on Bay Area Regional Organization held on April 18, 1970. Consists of professionals involved in regional agencies in the Bay area, academics, and laypeople interested in establishing a regional government. Gives present status of efforts and regional agencies created for regional problems. Presents transcripts of discussions about the problems of financing a regional government and what problems would be better handled on a regional level. Compares 3 state legislative proposals for regional government.

Sofen, Edward. The Miami Metropolitan Experiment, Bloomington: Indiana University Press, 1963.

A case study of the movement for the consolidation of Miami and Dade County into a two-tier federated government. Gives historical perspective leading up to referendum. Presents the actors and the arguments for and against.

Thornhill, W., ed. The Case for Regional Reform, Aylesbury: Hazell Watson, Viney Ltd., 1972.

Concerns regional government in Great Britain. Collection of essays focuses on the re-emergence of the popularity of regional government rather than regional administrative units, result of nationalism, the movement to weaken central government, the belief that a regional government would be more responsive to local needs, and the efficiency of larger governments vis-a-vis local government. Explores future prospects and political problems of organization. Various essays on the reorganization of various local governments and the problems involved.

U. S. Advisory Commission on Intergovernmental Relations.
Factors Affecting Voter Reactions to Governmental Re-
organization in Metropolitan Areas, Washington, D.C.:
USACIR, 1962.

Provides information about the voting behavior of the electorate to proposals for governmental change in 18 metropolitan areas. Change involved the re-structuring of government. The report analyzes the manner in which proposals for government reorganization are being presented to the voters. Good survey of how the voters perceive a metropolitan government.

C. Listings by Michael Volpe

Political and Administrative Approaches

Social Science & Humanities Index, Vol. 24

"Needs and Prospects for Research in Intergovernmental Relations,"
Pub. Admin. Rev., 30:264-76, May 1970.

This article focuses on the needs for understanding the complexities of intergovernmental relations. Three broad areas need systematic examination: (1) intergovernmental relations, (2) program delivery system capacity, and (3) institutional and technological matching. Research could be directed toward improving our methods for evaluating program impact. Need more knowledge on how counties operate--to what extent should regional organizations be involved in the chainlink partnership of local-state-federal relationships? Membership? Role? To what extent do existing boundaries' powers and roles, particularly state and local, reflect or not reflect optimism, decision-making areas?

"Federal-local Development Planning: Scale Effects in Representation and Policy Making," R. Warren, Pub. Admin. Rev., 30: 584-95, November 1970.

This article seeks to explore the validity of the assumptions used by Congress and the Executive Branch in setting organization criteria to be met by nationally subsidized local and regional non-federal agencies. Multi-county economic development districts are specifically considered to test the proposition that variations in scale, treated as neutral in designing these units, can have negative effects for both the ability of certain local groups to have their interests represented in district policy and for the implementation of national goals through district programs. The data available supports the hypothesis.

"Missing Dimension of Government." W. A. Robson, Political Quarterly, 42:233-46, June 1971.

The article begins by defining a homogenous region and a model region--the extent and characters of which will vary according to a purpose for which it is formulated. Regionalism is seen as a possible solution to three problems: (1) the reform of local government, (2) regional deconcentration, and (3) regional decentralization or devolution of central government functions.

Public Affairs Information Service, Vol. 57

"Politics, Planning and Power in New York State: The path from theory to reality," Vincent J. Moore, bibliography, illustrated, charts, maps, American Institute of Planners Journal, 37:66-77, March 1971.

A strong interaction among politics, planning and power which has evolved in New York State is the subject matter of this article. It describes four basic implementation strategies that have emerged: regionalization of state and local planning; integrated planning, programming, and budgeting; functional reorganization of the state governments; and use of public benefit corporations to construct state and local infrastructure components.

Public Affairs Information Service, Vol. 58

"New Directions in Regionalism: A case study of intergovernmental relations in Northwestern Wisconsin." Carlisle P. Runge and W. L. Church, charts. Wisconsin Law Review, 1971:449-519, No. 2, 1971.

Using the case study method, this article states that there is serious want of coordination in public planning and program execution. In Wisconsin, the author found a dearth of comprehensive and rigorous planning at all levels of government and an incapacity on the part of the planning agencies now established to induce adherence by the implementing agencies to such plans as do exist. Specifically the article urges the development of greatly strengthened planning and program coordination agencies at the multi-county regional, the state, the multistate regional, and the federal levels. It proposes, among other things, an overall state planning and review council along with a state planning office. The review council would report directly to the governor in seeking coordination between state and substate regional plans. It would include, as voting members, legislators from the major parties.

Public Affairs Information Service, Vol. 59

"United States Senate Committee on Agriculture and Forestry."
The Rural Development Act of 1972--analysis and explanation--
Public Law 92-419 '72, xii + 65p., 92nd Cong. 2nd Sess.
(Comm. print).

These hearings describe in detail the implementation of the Rural Development Act. It provides for grants to public agencies to facilitate private business and industrial developments; cost sharing and technical assistance for long term environmental efforts of agricultural producers; loans to public agencies for community facilities and related equipment to include water supply services; loans to finance business and industrial activities; nationwide land inventory and monitoring program; research and extension efforts in rural development. The hearings also contain a copy of the Minnesota Regional Development Act and pertinent explanations.

"Politics of Law Making and Implementation: The case of regional development policy." Dennis A. Rondinelli, Journal of Urban Law, 50:403-47, February 1973.

This article traces the federal government's attempt at regional development legislation. Nearly two decades of experience indicates, however, that the ideal process of planning envisioned in Federal legislation has rarely worked. Regional development legislation itself emerged through incremental, disjointed, uncertain political processes. Conflict, coalition-building compromise and political maneuvering marked the evolution of a succession of Federal laws through fragmented and multinucleated decision structures. The planning agencies created to implement the legislation were intergovernmental hybrids. Attempting to plan rationally in a pluralistic political environment, many regional development planners found that problems are multiple and conflicting, goals of regional decision-making organizations amorphous and vague, alternative courses of action uncertain and risky, costs and benefits value laden and unquantifiable. The multitude of public and private decision-making organizations in economically troubled regions, despite legislative mandates, consent to be coordinated only when they perceive it to be in their own interests. Each organization protects its domain of power and influence against the guidance and control of comprehensive planning agencies. Many regional development assistance proponents learned, often through bitter experience, that law making and implementation are, inextricably, political activities.

"United States House Committee on Agriculture." Rural Environmental Assistance Program: Hearings, January 29-31, 1973 on H.R. 2107 and other similar bills, '73, v + 178p., tables (92nd Cong., 1st Session).

Throughout the hearing it becomes apparent that the federal government can and does play a major role in regional conservation and environmental protection. President Nixon's decision to impound REAP funds indicates the lack of coordination and planning on the federal level, in the E.P.A. will soon force farmers to use conservation practices which will force some farmers to sell out to housing developers. The hearings point out the reverberating effects the impoundment will have on both urban and rural needs.

Water Pollution Policies and Politics. Fred A. Clarenbach, in: Water Pollution Control and Abatement, ed., Ted L. Willrich and N. William Hines, Iowa State University Press, 1967, pp. 71-84, refs.

Pressure for action or inaction comes from the polluters and public groups. With few exceptions, the states have been slow and weak in developing programs for water pollution control. Where laws exist, local municipalities may be among the worst offenders. The Federal approach setting standards of water quality has not always met with approval. One problem is the need to organize control on the basis of river basins.

Core Areas in Intrastate Political Geography. C.F.J. Whebell, Canadian Geographer, 12(2), 1968, pp. 99-112, 4 figs., table 34 refs.

The suggestion is made that to approach the subject of political geography from the standpoint of core areas would be more fruitful than some past approaches have been, particularly in extending the scope of this field to include substate units. A verbal model of this approach is offered and its use is exemplified in a detailed discussion of the early local government units of Southern Ontario and (briefly) of Nova Scotia. Finally, a schema for explaining interrelationships among various kinds of politico-territorial divisions is outlined.

III. LOCATIONAL ECONOMICS

A. Business Location, by John D. Williams

RECENT BOOKS

Conference Board Report No. 564. Corporate Moves to the Suburbs: Problems and Opportunities, New York: The Conference Board, Inc., 1972.

An analysis of why industries leave New York City and why some stay. Subjects that are addressed are the high cost of moving, zoning difficulties, room for expansion, and complaints against the city. A very good and comprehensive analysis.

Garner, Barry and Maurice Yeates. The North American City, New York: Harper and Row, 1971.

Groves, Paul A. Towards a Typology of Intrametropolitan Manufacturing Location, University of Hull Publications, 1971.

Groves attempts to add to the body of knowledge concerning the distribution of manufacturing within the urban core, by using San Francisco as a case study. He analyzes the historical evolution of industry in the Bay area to formulate a typology of intrametropolitan industrial location.

Hamer, Andrew. Industrial Exodus from Central City, Lexington, Massachusetts: Lexington Books, 1973.

This book develops a framework for analyzing the relevant costs of locating manufacturing firms at different sites in the urban area. It attempts to understand the affect of variations in cost of production over space. Boston is used as a case study. The ultimate goal of this book is to aid in historical trend analysis in the hope that the future of our cities can be forecasted more accurately.

Harris, Curtis C. and Frank E. Hopkins. Locational Analysis, Lexington, Massachusetts: Lexington Books, 1972.

This book presents a model designed to explain industrial location. It considers regional factor prices and regional agglomeration as stimuli to location. Further, the book considers theory, transportation, regional delineation and regression equations to explain business location. It is designed for the advanced student in economic geography or planning.

Hoover, Edgar M. Introduction to Regional Economics, New York: Knopf, 1971.

In Chapter Four of this book, Hoover examines patterns in which similar business units locate themselves. This involves the 'why and where' of location. Competitive survival, personal reasons, labor, materials and market considerations are all focused upon to help explain these business locational patterns.

Lloyd, Peter E., and Peter Dicken. Location in Space: A Theoretical Approach to Economic Geography, New York: Harper and Row, 1972.

This book is designed for the beginning student in economic geography, locational analysis or regional economic development, who has little or no background in statistical techniques. The book contains simple and clear explanations of techniques such as correlation and regression, principal components and factor analysis. The beginning of the book is devoted to an introduction to economic geography, the basis of model building and systems theory. Each chapter has a bibliography.

Morrill, Richard J. The Spatial Organization of Society, Belmont, California: Wadsworth Publishing Company, 1970.

This book begins with the premise that society is relatively similar from place to place. Therefore, predictable, organized patterns of location can be identified. This structure of society is derived from the efficient use of space and specific features of a particular area. The author seeks to extract these commonalities of structure. The book is excellent for anyone involved in regional science. As such, the information on business location is particularly relevant.

Smith, David M. Industrial Location: An Economic Geographical Analysis, New York: John Wiley and Sons, Inc., 1971.

This book is written primarily for graduate students in the field of economic geography. However, it could be of great assistance to planners. The approach embodies techniques and concepts that are relevant to regional and urban planning at a practical level. It is designed as a practical guide but it does contain statements of theory. It consists of theoretical synthesis, model building, practical application, alternative approaches and pursues the connection between industrial location and economic development planning.

Vance, James E., Jr. The Merchant's World: The Geography of Wholesaling, Englewood Cliffs: Prentice Hall, 1970.

A historical approach to the distribution and organization of wholesaling activities in the past several hundred years.

RECENT ARTICLES

Bergsman, Joel, Peter Greenston, and Robert Healy. "The Agglomeration Process in Urban Growth," Urban Studies, 9(3), 1972.

The authors analyze the extent to which all urban economic activity can be aggregated to larger groups, such that activities within a group share a common locational pattern while activities in different groups do not.

Cassidy, R. "Moving the Suburbs," New Republic, 166:20-3, January 22, 1972, pp. 20-23.

This article is a rather terse and laconic overview of the current exodus of business from the large metropolitan areas. The article can be useful in gaining a broad and general understanding of the issue and its magnitude.

"Exodus from New York City: What Makes Businesses Leave." U. S. News and World Report, 69:50-3, December 7, 1970, pp. 50-53.

As can be expected, this is a news article designed with the layman in mind. It has some value as a starting point to gaining a general understanding of the suburbanization of business. It describes in simple language the cost of congestion and the key changes which are occurring in the way Americans conduct their business.

"Flight from the Cities." Newsweek, 76:58, November 30, 1970, pp. 58-61.

A typical Newsweek article which is short but informative. The article contends that businesses are leaving the city because of incessant strikes, crimes, pollution, absenteeism, and the racism of executives.

Forbes, J. D. "Central Place Theory - An Analytical Framework for Retail Structure," Land Economics, Vol. XLVIII, No. 1, February 1972, pp. 15-22.

This article is based on the assumption that the number of central functions is strongly related to population. This paper provides a systematic framework for analyzing the structure of urban retailing by relating population to the number of stores in metropolitan areas.

Glickman, Norman J. "An Econometric Forecasting Model for the Philadelphia Region," Journal of Regional Science, Vol. 11, No. 1, April 1971, pp. 15-31.

This article describes the application of an econometric model for forecasting regional economic activity. Econometric models are said to be more flexible than economic base of input-output models. A highly technical piece of work.

Haines, George H., Leonard Simon and Marcus Alexis. "An Analysis of Central City Neighborhood Food Trading Areas," Journal of Regional Science, Vol. 12, No. 1, April 1972, pp. 95-105.

It is generally believed that "the poor pay more" because of more localized shopping and small trading areas. The authors prove this to be false by comparing two inner city neighborhoods with two other central city neighborhoods.

Hopkins, Frank E. "Transportation Cost and Industrial Location: An Analysis of the Household Furniture Industry," Journal of Regional Science, Vol. 12, No. 2, August 1972, pp. 261-277.

This study examines the effect of transportation cost upon industrial location. Specifically, the model investigates the change and the level of employment in the household furniture industry between 1964 and 1966 at the county level for the continental United States. The location model does not rely solely upon transportation costs as the explanatory variables, but also incorporates the traditional variable grouping of labor cost and agglomeration factors.

Kloth, D. W. and L. V. Blakley. "Optimum Dairy Plant Location with Economics of Size and Market Share Restrictions," American Journal of Agriculture Economics, 53(3), August 1971, pp. 461-477.

A description of how economics are possible under optimum organization and location in the dairy industry. Estimates of the effects of market share restrictions for processing farms are estimated.

Kottis, George C., and Athena Kottis. "A Statistical Exploration of Some Factors Responsible for Decline of the Central Business District," Land Economics, Vol. XLVIII, No. 2, May 1972, pp. 169-173.

This paper examines the major functions of the CBD, namely retail trade. The paper formulates a number of hypotheses concerning certain factors responsible for the decline of the retail trade sector and are tested statistically with data for a number of American SMSA's.

Love, Robert F. "A Computational Procedure for Optimally Locating a Facility with Respect to Several Rectangular Regions," Journal of Regional Science, Vol. 12, No. 2, August 1972, pp. 233-247.

A model for optimal location based on Euclidean Theory. It uses rectangular population density regions. Highly technical.

Nelson, Jon P. "An Interregional Recursive Programs Model of Production, Investment, and Technological Change," Journal of Regional Science, Vol. 11, No. 1, April 1971, pp. 33-47.

This article formulates an interregional linear program (ILP) model suitable for positive, descriptive analysis of interregional production and investment. Highly technical.

Pogue, Thomas F., and L. G. Sgontz. "Value-Added vs. Property Taxation on Industrial Location," Land Economics, Vol. XLVII, No. 2, May 1971, pp. 150-157.

The possible use of the value-added tax in the United States has been given considerable attention in recent years. The value-added tax has also been suggested as a substitute for all or part of the taxes on business property. This paper is concerned with the influence of such a substitution upon the location decisions of business firms.

Struyk, Raymond J. "Evidence of the Locational Activity of Manufacturing Industries in Metropolitan Areas," Land Economics, Vol. XLVIII, No. 4, November 1972, pp. 377-382.

The purpose of this paper is to document the amount of locational activity which was ongoing in manufacturing industries in four metropolitan areas during a 32-month period beginning in 1965. The data shows that there was much locational activity among manufacturing industries in the sample areas over the study period indicating that significant changes in the existing spatial configuration of their employment might have been effected in the short run through imaginative public policy.

Tapiero, Charles S. "Transportation-Location-Allocation Problems Over Time," Journal of Regional Science, Vol. 11, No. 3, December 1971, pp. 377-384.

The paper is an attempt to solve the location problem in terms of minimal economic costs. It has particular application in the spatial economics of warehouses, distribution centers, communication centers and production facilities. Highly technical.

Young, G. I. M., M.A.I. "Feasibility Studies," The Appraisal Journal, July 1970, pp. 376-383.

This article examines the parameters to be considered in locating revenue producing projects. The parameters that are considered are (1) cost and value, (2) market studies, (3) economic demand and investment yield, (4) prediction of revenue, (5) operating expenses, and (6) net income and capitalization. This is one of the better articles listed. It is written primarily for businessmen who are toying with the idea of business location. It is comprehensive but not esoteric enough to limit its reading audience.

RECENT BIBLIOGRAPHIES

Andrews, Howard F. Working Notes and Bibliography on Central Place Studies, Council of Planning Librarians, Exchange Bibliography No. 209, 1971.

The bibliography contains a wealth of information about shopping patterns, distribution of business activity, gravity models, consumer behavior, commodity flows, spatial economics, land values, retail location models, and numerous case studies.

Groves, Paul A. The Location of Manufacturing in Urban Areas, Council of Planning Librarians, Exchange Bibliography No. 198, 1971.

This bibliography provides some basis for the consideration of locational patterns within the urban area. Its main concern is manufacturing location. It concentrates on the allocation of space to manufacturing. It does not view the city as a "point in space," and therefore, excludes the functional classification and economic base of cities.

Kessler, Mary Z. Shopping Centers, Council of Planning Librarians, Exchange Bibliography No. 208, 1971.

This bibliography contains everything you will ever want to know about shopping centers, including many good works on location criteria.

Lancaster, Joel R. Industrial Suburbanization, Council of Planning Librarians, Exchange Bibliography No. 223, 1971.

The works listed here cover site selection factors, suburban industrial patterns, industrial parks, and small town development.

Muller, Peter O. Locational Analysis and Economic Geography: A Comprehensive Bibliography of Recent Literature on Theory, Techniques, and the Spatial Organization of Agriculture, Manufacturing, and Transportation, Philadelphia: Temple University, Samuel Paley Library, Public Services Division, 1972.

B. Residential Location, by Robert C. Lee

Association of Japanese Geographers. Japanese Cities: A Geographical Approach, Special Publication No. 2, Tokyo, 1970.

Contains a section on urban population and urbanization which gives a thoughtful treatment of rural depopulation, urban over-crowding and associated housing problems.

Bell, Carolyn Shaw. The Economics of the Ghetto, New York: Pegasus, 1970.

A useful overview that considers income, housing, employment, consumption, welfare, training and education as economic variables of inhabitants of ghetto areas.

Burby, Raymond J., Thomas G. Donnelly, and Shirley F. Weiss. A Model for Simulating Residential Development in Reservoir Recreation Areas, Chapel Hill: University of North Carolina Water Resources Institute, 1971.

Burby, Raymond J. and Shirley F. Weiss. Public Policy and Shoreline Landowner Behavior, Chapel Hill: Water Resources Research Institute, 1970.

Concerned with residential development along shorelines.

Burns, Leland S., with Robert G. Healy, Donald W. McAlister and B. Khing Tjioe. Housing: Symbol and Shelter, Los Angeles: U.C.L.A. Graduate School of Business Administration, 1970.

Articulates a rationale for investment in housing within the context of development planning.

Chapman, Stanley D., ed. The History of Working Class Housing, Newton Abbott, David and Charles, Ltd., 1971.

Studies of working class housing in various British cities. Goes into specifics of construction as well as rents, costs and occupational specifics of occupants.

Clawson, Marion. Suburban Land Conversion in the United States: An Economic and Governmental Process, Baltimore: Johns Hopkins Press, 1971.

Focuses on forces, processes, actors and possibilities for the future, drawing upon case studies from the Northeastern Urban Complex in the United States.

Colloques Internationaux du Centre National De La Recherche Scientifique. L'Abolition de la Feodalite dans le monde occidental, Paris: Editions du Centre National de la Recherche Scientifique, 1971.

A collection of detailed case studies of the economic and social transitions involved in the dissolution of the feudal system in Western Europe, as well as parts of Eastern Europe, and even Brazil.

Council of Planning Librarians. An Annotated Bibliography of Selected Readings for the Program of Real Estate and Urban Development Planning, Exchange Bibliography No. 156, 1970.

Council of Planning Librarians. The Examination of Real Property Tax Exemptions: An Example of Land Use Planning for Fiscal Gain, 1971, Number 173, Stutz, Frederick P.

Council of Planning Librarians. The Housing Industry: A Bibliography, 1970, Number 149, Akin, Joy.

Davidson, Claud M. Rural and Suburban Towns: Spatial Characteristics of Change in Population and Functional Structure, Council of Planning Librarians, Exchange Bibliography No. 272, 1972.

Feagin, J. R., Charles Tilly, and Constance W. Williams. Subsidizing the Poor: A Boston Housing Experiment, Lexington, Massachusetts: D. C. Heath, 1972.

Provides a review of the economic and social geography of Boston's housing. Evaluates the Boston experiment, and goes into specifics on the housing market and other economic and social factors.

Freeman, Linton C. and Morris H. Sunshine. Patterns of Residential Segregation, Cambridge: Schenkman, 1970.

Focuses upon neighborhood housing markets and presents a simulation model of the process, including detailed results of applying the model.

Gerson, Wolfgang. Patterns of Urban Living, Toronto: University of Toronto Press, 1970.

Examines urban areas to discover some of the structural relationships of human beings with each other and with places in which they live and work.

Golant, Stephen M. The Residential Location and Spatial Behavior of the Elderly: A Canadian Example, Chicago: University of Chicago Department of Geography Research Paper Series, 1972.

Gruen, Nina Jaffe and Claude Gruen. Low and Moderate Income Housing in the Suburbs: An Analysis for the Dayton, Ohio Region, New York: Praeger, 1972.

Chapter topics include: The Need for Subsidized Housing in the Suburbs, Attitudes and Preferences for Low and Moderate Income Households, Suburban Response to Housing Programs, Possible Impacts to Low and Moderate Income Housing on the Neighborhood Environment, and Existing Programs and Recommendations for Increased Suburban Housing.

Hance, W. A. Population, Migration and Urbanization in Africa, New York: Columbia University Press, 1970.

With a wealth of charts and maps this book presents a striking picture of recent impacts of population, migration, and urbanization on all aspects of life, including housing. Pages 281 and 292 portray the grim specifics of housing location and inadequacy problems.

Jephcott, Pearl. Homes in High Flats: Some of the Patterns Involved in Multi-Story Housing, Edinburgh: Oliver and Boyd, 1971.

Chapter 7 is particularly valuable in presenting a case study of the provision and use of services and facilities for three high rise "estates".

Juppenlatz, M. Cities in Transformation: The Urban Squatter Problem of the Developing World, St. Lucia, Australia: University of Queensland Press, 1970.

Lansing, John B., C. W. Clifton and J. N. Morgan. New Homes and Poor People: A Study of Chains of Moves, Ann Arbor: Institute for Social Research, 1969.

A study of chains of moves set in motion by the construction of new housing using sample data of new dwelling units in a number of metropolitan areas.

Laurenti, L. Property Values and Race, Berkeley: University of California Press, 1960.

Reports findings of the comprehensive study conducted for the Commission on Race and Housing. Provides a review of existing theories of race and property value, conclusions of the study and detailed analyses for seven cities. Also treats in detail the standards of property maintenance by nonwhite owners. Though obviously outdated, appears to be the classic study of its type.

Lowry, Ira S., ed. Rental Housing in New York City: Volume I, Confronting the Crisis, New York: New York Rand Institute, 1970.

Lowry, Ira S., Joseph S. DeSalvo, and Barbara M. Woodfill. Rental Housing in New York City: Volume II, The Demand for Shelter, New York: New York Rand Institute, 1971.

Martin, Leslie and Lionel March. Urban Space and Structures, New York: Cambridge University Press, 1972.

A collection of papers, product of the work at University of Cambridge graduate architectural department, the Centre for Land Use and Built Form Studies.

Intended to bridge the gap between architects and planners, this book applies the techniques of mathematical modeling and computer analysis to the problems of economics in land use. Attempt to provide a neutral means of judging planning proposals, uninfluenced by biases and special interests, that will prevent the creation of urban patterns marked by over building and misutilization.

Meyer, David R. Spatial Variation of Black Urban Households, Chicago: University of Chicago Department of Geography Research Paper Series, 1970.

Examines variation in income, housing and family type characteristics.

Muth, Richard F. Cities and Housing: The Spatial Pattern of Urban Residential Land Use, Chicago: University of Chicago Press, 1970.

Analyzes problems of urban housing in the context of micro-economic analysis. Thesis is expressed that the market forces of demand and supply dominate the pattern of urban growth and the housing situation. Government programs have little effect and what influence they have is probably bad. Slums are the result of poverty, and urban renewal merely removes buildings in which poor people live. On the other hand, Federal programs that subsidize highway construction, rapid transit and new towns contribute to greater urban decentralization.

Page, Alfred N. and Warren R. Seyfried, eds. Urban Analysis: Readings in Housing and Urban Development, Chicago: Scott Foresman, 1970.

Focuses on economic aspects of the role of housing in urban development, including the topics of housing demand; housing theory; location, property values and race; slums and urban renewal; and public policy and the urban environment.

Pierard, Christopher, ed. Les plus anciens comptes de la ville de Mons, 1279-1356: Tome I, Brussels: Palais des Academies, 1971.

Mons in Hainault has preserved the documents of its financial administration from its beginnings. In this book the Royal Academy of Belgium exposes the oldest part of this collection. Should be of interest for its exposition of tax and rent records from 1279 to 1396 A.D.

Real Estate Research Program. Essays in Urban Land Economics, U.C.L.A., 1966.

Robson, B. T. Urban Analysis: A Study of City Structure, Cambridge, England: Cambridge University Press, 1969.

Analyses the human ecology of Sunderland, England, a town in Northeast England with a high proportion of working class people employed in traditional heavy manufacturing and ship-building industries.

Rose, Harold H., guest editor. Economic Geography, Vol. 48, No. 1, January 1972.

A complete journal volume subtitled Contributions to an Understanding of Black America. This volume presents several articles directly related to the issue of economics of residential location, including: "The Spatial Development of Black Residential Subsystems," by Harold M. Rose; "Access to Housing -- the Role of the Real Estate Industry," by William H. Brown, Jr.; and "Race, Residence and Work-place in Detroit, 1880 to 1895," by Donald R. Deskins, Jr. Also contains a bibliography of further sources.

Rose, Harold M., ed. Geography of the Ghetto: Perceptions, Problems and Alternatives, DeKalb: Northern Illinois University Press, 1972.

Sennett, Richard. Families Against the City: Middle Class Homes of Industrial Chicago, 1872-1890, Cambridge: Harvard University Press, 1970.

Focuses on interaction of city life, family structure, and work experience, drawing primarily upon a case study of a Chicago neighborhood.

Smith, Wallace F. Housing: The Social and Economic Elements, Berkeley: University of California Press, 1970.

A text for urban studies, this book considers the institutions comprising the housing sector and provides a framework for analysis of housing problems, with some treatment of residential location.

Stegman, Michael A., ed. Housing and Economics: The American Dilemma, Cambridge: MIT Press, 1970.

A good selection of reprinted articles on the subject.

Stegman, Michael A. Housing Investment in the Inner City: The Dynamics of Decline, Cambridge: MIT Press, 1972.

A heavily quantified and tabulated case study of the inner city housing problem on a microeconomic scale. Includes attitude survey of housing conditions and costs.

Sullivan, John H., ed. Explorations in Urban Land Economics, Hartford: University of Hartford, 1970.

Four essays including one on the economics of the ghetto and one on a model of housing demands in metropolitan areas.

Timms, D.W.G. The Urban Mosaic: Towards a Theory of Residential Differentiation, No. 2, Volume of Cambridge Geographical Studies, Cambridge: Cambridge University Press, 1971.

Provides a series of essays aimed at the goal of an integrated theory of residential differentiation of the urban population. Related residential differentiation to economic status, as well as ethnicity, mobility, familism, and combinations thereof.

Woods, Robert A. and Albert J. Kennedy. The Zone of Emergence: Observations of the Lower Middle and Upper Working Class Communities of Boston, 1905-1914, Cambridge: MIT Press, 1969.

Explores life in the city's residential and industrial communities between 1905-1914, with particular focus on the rising middle class. A second edition; initially published in 1962.

C. Residential Location, by Ronald P. Manley

Ford, W. F. and L. E. Hill. "Reverse Migration and Population Dispersion: A Partial Solution for Urban Problems," Nebraska Journal of Economics and Business, 10, 4, 1971.

Overcrowding in congested areas causes many socioeconomic problems, including environmental pollution and anti-social behavior. Various alternative proposals for solving these problems are described and evaluated. A program which would emphasize regional development of growth centers and rural industrialization is endorsed. Further experimentation with new towns and strategic hamlets are encouraged. A policy package to implement a program is outlined which would include a policy for regional economic development through investments in social overhead capital, technical assistance, and development loans, as well as a program designed to encourage outmigration from larger cities.

Fabricant, Ruth A. "An Expectation Model of Migration," Journal of Regional Science, 10, 1, 1970.

Most economic analysis of internal migration have taken as their basis the framework of the classical competitive model of factor mobility. In this article an alternative theory of migration is postulated in which migration from area A to area J is viewed as a response to a positive expected excessive demand for labor. By formulating expected demand/supply functions for each regional labor market separately, the migration function becomes a reduced form equation. An empirical model is set up and tested on gross migration data describing the movements of adult males between nine U.S. Census divisions during the five year period 1955-1960. A test of this model indicated an explanatory power of over 60%. The author feels that the model explains as much as the traditional model and questions the basic foundations of the traditional model. More specifically the model takes a hard look at the assumptions underlying the process by which a person decides whether or not to migrate.

Winger, Alan R. "Residential Construction, Acceleration, and Urban Growth," Journal of Regional Science, 11, 1, 1971.

Given the importance of residential construction in most urban communities, fluctuations whatever they might be induced or otherwise, can become important growth factors in their own right. Through resurrection of the macro-economic principle of acceleration, the author attempts to provide a framework for his analysis. His stated purpose is to explore the theoretical and empirical foundations of the links between industry and final demand for housing via the acceleration principle.

Niedercorn, John H. "A Negative Exponential Model of Urban Lane Use Densities and its Implications for Metropolitan Development," Journal of Regional Science, 11, 3, 1971.

During post W.W.II years, C. Clark popularized the idea that urban employment and population densities tend to follow a negative exponential distribution radiating outward from the center of the city. This paper attempts to erect theoretical underpinnings for Clark's findings. It demonstrates under specific conditions urban land rents have approximately negative exponential distributions; and that both net and gross population densities have an approximately negative exponential distribution. The model can be used to demonstrate the effects of improvements in commodity transportation and communication technologies on the shape of the modern city. Conclusions thus reached are rents, employment densities and population densities all conform to the negative exponential distribution and that urban sprawl appears chiefly a consequence of the reduction in time and personal cost of transportation within the metropolitan area.

Chinitz, Benjamin and Richard Dusansky. "The Patterns of Urbanization Within Regions of the United States," Urban Studies, 9, 3, 1972.

This paper examines the patterns of urban growth within broad regions of the U.S. Its purpose is to shed some light on the causes of urban growth and the interaction between regional and urban settlement patterns. The country is divided into nine regions and the data for the twentieth century is reviewed in terms of urban-rural, metropolitan-non-metropolitan, numbers and average size of metropolitan areas. The influence of industrial composition or mix on settlement patterns is then analyzed in terms of the relative importance of agricultural employment over time and between regions. Standard regression techniques are employed in which each region at each date is treated as an independent observation.

Ryan, Bruce. "The Criteria for Selection Growth Centers in Appalachia," Proceedings of the Association of American Geographers, 2, 1970.

The designation of growth centers in Appalachia is the responsibility of the thirteen states affected by the Appalachian Regional Development Act of 1965. Constrained by the federal-state format of the Act, State planners have prepared annual investment plans which focus upon areas deemed to have significant potential for future growth, in an attempt to revitalize a degraded central place system. Three methods for determining these growth centers are: (1) sounding out the local political situation; (2) idealizing state concepts of what growth centers should be; and (3) formulating criteria that distinguishes actual centers with these ideal attributes and assigned on a priority basis.

Pappas, P. "Trip Lengths in Relation to Facilities and Journey to Work," Ekistics, 30, 177, 1970.

This household survey was carried out in Athens in 1963 and dealt with eighteen towns in Greece. Twelve selected facilities thought to be representative of the particular socioeconomic class of people were examined. Some of the facilities selected were: groceries, bakeries, churches, schools, etc. The report discusses the distribution of trips by the distances they covered from the home divided into two categories. Trips up to 1,500 meters and over. The study estimated the averages and examine certain relationships between trip lengths and basic variables such as income, density and distance. Major conclusions reached were trip lengths to work were higher than those to service facilities and density not distance is strongly connected to journey to work.

Seyfried, Warren R. "Location and Centrality of Urban Land Values," Land Economics, 46, 3, 1970.

This report discusses the sensitivity of the index of urban centralization to the location of the reference site from which the rent gradient is measured. The index of centralization is a measure of centrality effect of reference sites on the urban rent surface. A composite number combines four characteristics: area, value, location and use. If the composite data is altered by location relative to a designated location, the index measures the sensitivity of reference locations. This data can be applied to cross-sectional analysis, comparative statistics or time series analysis.

Clouts, Howard A. "Influence of Urbanization on Land Values at the Urban Periphery," Land Economics, 46, 4, 1970.

The author develops a model of land values at the urban periphery that takes into account the fact that such land, even when experiencing a decreasing intensity of use while ripening for urban development--which would lead one to suspect falling land values, increases in value due to expectation of future increased income.

Hochman, O. and D. Pines. "Competitive Equilibrium of Transportation and Housing in the Residential Ring of an Urban Area," Environment and Planning, 3, 1, 1971.

A general approach to competitive equilibrium within an urban area is suggested in this paper. The demand for transportation is incorporated into the equilibrium conditions of the household are incorporated into the existing model of market equilibrium. The resulting relations are used to verify the characteristics of the prices of housing, rents, velocity, transportation costs, and densities. The implications of the model are consistent with the exponential form of the velocity function observed empirically by Angel and Hyman (1970). These implications illuminate the question of efficient resource allocation in improving the transportation system in the proximity of the CBD.

Preston, R. E. "The Structure of the Central Place Systems," Economic Geography, 47, 2, 1971.

The findings of this analysis, though consistent with general theory, are in partial conflict with what appears to be the accepted position, i.e., that hierarchial patterns are recognizable at subregional levels, but because of greater social physical and economic heterogeneity of large areas, the inter- and intra-area difference found in subsystems are less when aggregated, and produce a continuum. Given the necessary updating of some of the original definitions, Christaller's theories remain intact, despite technological changes that have taken place.

Greenwood, M. J. "A Regression Analysis of Migration to Urban Areas of a Less Developed Country: the Case of India," Journal of Regional Science, 11, 2, 1971.

In a less developed country such as India, economic factors such as transportation costs, income, and job opportunities enter significantly into the individuals decision to migrate from a rural area to an urban area. It was found that interurban area migrants tend to move from cities with relatively low incomes to cities with higher income levels, while migrants from rural areas tend to move to rural areas of higher income. Differences in expected incomes differentiate between low-income rural and urban areas and high income rural and urban areas, and help to explain the stronger ties which lower income persons in rural areas have to their homes. Purely economic factors explain 54% of the variance from rural to urban, while 63% of the variance is explained in the migration from urban areas to other areas.

Fuguitt, G. V. "The Places Left Behind: Population Trends and Policy for Rural America," Rural Sociology, 36, 4, 1971.

There is a growing interest in population distribution policy with proposals for a slowdown of growth in and near large cities, and a promotion of growth in rural areas. This paper is an analysis of population changes in incorporated places of the nonmetropolitan U.S. between 1950 and 1970. Size of place distributions have changed little since 1950; however, the percentage of places growing over each decade ranges from under 30 to over 85, with the conclusion that smaller, remote places are less likely to grow. In the South and the North Central regions there was an increase in smaller towns in terms of growth. There is evidence of an emerging decentralization trend around larger non-metropolitan centers. Regions of the country show marked difference in some patterns. The implications of the results for population distribution policy and for problems in formulating and implementing such a policy are discussed.

Vanderkamp, J. "Migration Flows, Their Determinants and the Effects of Return Migration," Journal of Political Economy, 79, 5, 1971.

The distinction among new, return and autonomous migration flows is examined at the theoretical level. This helps to explain the relative magnitude of observed gross and net migration flows. Return migration has the effect of linking gross migration flows in opposite direction. The income distance trade-offs is strongly affected by the state of the labor market. Thus, not only is the overall level of migration reduced under depressed conditions, but the allocative efficiency of migration is also adversely affected.

Kisschenbaum, A. "Patterns of Migration from Metropolitan to Nonmetropolitan Areas: Changing Ecological Factors Affecting Family Mobility," Rural Sociology, 36, 3, 1971.

Although the main source of urban growth in the U.S. has been the rural population, the processes which initially brought about migration from rural to urban areas have begun to reverse themselves. Formerly, the combined effect of farm mechanization and the simultaneous creation of large numbers of unskilled urban jobs favored this migration. Now factors of decentralization and relocation of industry outside urban centers in addition to changes in the employment structure seems to have fostered an increase in migration back to the countryside. The author aims to measure the migration flow in light of these changes.

Barnett, L. D. "The Rural Ideal in American Society and Its Influence on Attitudes Towards Population Limitations," Journal of Biosocial Science, 4, 2, 1972.

A prevalent feature of current U.S. society is a strong desire to live in rural areas of low population density. The growth of outdoor recreation activities in recent years has brought more people from urban areas to the countryside. Multivariate analysis is used to assess the relationship of nine demographic factors to the probability of occurrence of a rural as opposed to an urban ideal. The author formulated a hypothesis that the rural ideal promotes positive attitudes toward domestic population control.

Siegel, J. S. "Development and Accuracy of Projections of Population and Households in the U.S.," Demography, 9, 1, 1972.

The history of official U.S. projections of populations and households is briefly reviewed, with particular attention to methods and the relation of methods to accuracy. Some alternative methods and problems of measuring accuracy of population projections are considered. The author feels that the errors in the projected population growth by components and age, and the range from high to low estimates should be examined in addition to errors in total population. Elaboration of methods of projections has not greatly increased precision largely because birth rates have fluctuated widely, and the fluctuations have proven difficult to predict.

Taeber, C. "Population Trends of the 1960's," Science, 176, 1972.

Early results of the 1970 Census shows that growth rates have slowed down, with most growth (80%) occurring in the metropolitan areas. Within these areas most of the growth took place in the suburb. There were also shifts in population from the heartlands to the seacoasts. One-fourth of the countries in the U.S. showed a net immigration, with the remainder showing a net migration with 40% of all counties having a net loss. Overall this author points out significant population trend throughout the country.

McAllister, R. J., E. J. Kaiser and E. W. Butler. "Residential Mobility of Blacks and Whites," American Journal of Sociology, 77, 3, 1971.

A limited amount of literature suggests that blacks move more often than whites but that their mobility is more local. In testing this double hypothesis with interviews from a national panel of 1,500 households, we find that greater blacks' tendency to be renters. Black renters are less likely to move, and black owners are about as stable residentially. Furthermore, blacks are more likely to move elsewhere in the metropolitan area or to migrate out of it. Not only do different racial categories move differently, but they apparently do so for different reasons.

D. General Location Theory, by J. David Foster

Artle, Varaiya & Roland. "Location Theory and Urban Economics," Swedish Journal of Economics, 74, (1), 1972, pp. 174-183.

This is one of a series of papers in location theory and urban economics. The effects of transaction costs upon the locational decisions of households is analyzed. The study considers two subsets of households, "rich" and "poor." As the composition and size of a market area vary, a set of achievable real-income distributions among the two household groups is obtained. Although the elements of this set represent equilibrium points, only a subset among them is also efficient, and it may take a coalition of households to reach an efficient point. Conflicts of interest are inherent in the problem, and the analysis indicates that the issue of efficiency (on the consumption side) cannot be meaningfully separated from the issue of real-income distribution - "equity."

Beckman, Martin J. "Equilibrium versus Optimum: Spacing of Firms and Patterns of Market Areas," Recent Developments in Regional Science, ed. by R. Funck, (Pion Press, London), 1972, pp. 50-62.

Problems of optimum location are very much under discussion again. There has not been such interest in this topic, according to the author, since the pioneering work of Christaller and Losch. The purpose of this paper is to clarify, through direct calculations, what happens in a homogeneous market of one and two dimensions when markets are liberalized from a single firm monopoly to multiple firm monopoly to free entry; and to demonstrate how the market falls short of welfare maximization. At the same time, the author discusses the shapes of market areas under free entry into the two dimensional economy.

Beckman, Martin J. and Gunter Schramm. "The Impact of Scientific and Technical Change on the Location of Economic Activities," Regional and Urban Economics, 1972, pp. 159-174.

The impact of scientific and technical change on location and the spatial structure generally poses a number of challenging theoretical problems and raises some momentous policy problems, because technical change is one of the main engines of economic growth, and rapid technical change and persistent economic growth are characteristics of our times. It is the purpose of this paper to analyze some of the theoretical implications of technological change on the location of economic activities to compare the findings with actual developments.

Campbell, John. "Growth Pole Theory, Digraph Analysis and Inter-Industry Relationships," Tijdschrift voor Economische en Sociale Geografie, 63, 1972, pp. 79-87.

The search for viable regional development policies has resulted in the widespread adoption of the growth pole concept as an instrument for introducing economic change. The interindustry relationships which underlie the growth pole idea may be clarified by applying graph theoretic concepts to conventional input-output data. Each industry is represented as a vertex in the digraph and the flows of goods and services between industries are represented as arcs joining the vertices. Selected measures and structural characteristics of digraphs-including degree, classification of points in a converse digraph, percentage connectivity, relative centrality, condensation relative to strong components, and blocks - are presented and interpreted in an interindustry framework.

Commission on Regional Aspects of Economic Development. Colloquium on Regional Inequalities of Development, published by the International Geographic Union, Rio De Janeiro in 1971, p. 24 ff.

Contains a list of participants at the colloquium, and the partial reports of several working sessions. Themes discussed include the following: Recent trends in regional planning ideas; the idea of poles of development; problems of scale and centre periphery models; international comparisons in regional inequality analysis; limitations on knowledge of regional growth processes and of policy effects on differentials; and a general integrative report.

Gardiner, George. "A Common Regional Policy - The Next Steps," New Europe, 1972, pp. 28-30.

Regional imbalance is a problem in many European countries, and the Paris summit conference proposes a European Regional Development Fund. Imbalances resulting from industrial change and structural underemployment are to be covered by the scheme. This is important to the U.K. because most of the European regional problems arise from depressed agricultural regions. The Fund will need to be large and policies adopted should be common to all nine countries of the enlarged Community. The effect on existing policies in the U.K. will not be as serious as some have suggested, and in particular we shall not need to attempt to classify all our development Areas as peripheral -- this according to the British author.

Gottman, Jean. "The City as a Crossroads," Ekistics, 34, (204), 1972, pp. 308-309.

Cities have been established at crossroads from time immemorial. Until recently each city formed a well-rounded social and economic unity, a community set aside from the surrounding countryside. Nowadays the increased mobility of people has caused the basic functions of cities to change. The city now has become a vast crossroads that services people who neither live nor are employed in it. The centers of large cities are mainly transactional areas, offering opportunities for people to meet and discuss business matters, or simply to pursue recreational objectives. At the other end of the social spectrum the modern city is one of the great refugee camps of the modern world.

Grossack, Irvin M. "The Concept and Measurement of Permanent Industrial Concentration," Journal of Political Economy, 80 (4), 1972, pp. 745-60.

The underlying thesis of this paper is that static measures of concentration cannot by themselves indicate the degree of monopoly power of an industry or market. The argument behind this view is that the monopoly power of the large firms ultimately depends upon their ability to inhibit entry and the growth of smaller firms. No static measure of concentration can reflect this ability because it can only be measured over a period of time. The main part of the paper is concerned with developing and interpreting new measures that would incorporate within them the power, or lack of power, of the large firms to inhibit entry and the growth of smaller firms. In developing these measures, the starting point is the work of Friedman and Kuznets in measuring the permanent component of an income distribution. The market shares of the firms are divided into permanent and transitory components, and the paper shows that by comparison of observed market shares for two different periods of time it is possible to infer measures of concentration that are based upon the permanent component of the shares. These measures of permanent concentration incorporate within them the ability of the large firms to inhibit entry and the growth of smaller firms.

Gerrnhut, Melvin L. The Theory of the Firm in Economic Space, Appleton-Century-Crofts, Education Division, Meredith Corp., New York, 1970, 388 pages.

This book includes substantial extension of many ideas developed or suggested in earlier publications. Location economics and regional science are major sources for an integrated spatial economic approach to understanding firms, production and services, i.e., they are sources of micro-economic and regional dimensions of the same problem. There are four parts. The first examines impacts of economic space on micro-economic theory, emphasis being placed on economic man, uncertainty and relationships between oligopoly, uncertainty, space, market areas and theories and models thereof. The second concentrates on price and resource allocation, contrasting organized and unorganized spatial oligopoly, product and factor prices and efficiency. The third deals with spatial distribution, introducing the urban setting and settlement theories which are concerned with intra- and inter-urban spatial efficiencies, concentration vs. dispersal, and the firm's spatial equilibrium. The fourth part attempts general equilibrium analysis and introduces welfare and social policy constraints.

Hansen, Niles M. Growth Centers in National Economic Development, New York: The Free Press, 1969.

Growth centers have created considerable interest over the past decade and are expected to be a major feature in new regional legislation. This is a collected work edited by one of the foremost American contributors in the field. The papers included discuss in detail the general theory of growth centers or "growth poles" and treat the origin and implications of this theory for regional planning policies in the U.S. A reasonably thorough discussion is also provided of case study applications and, when appropriate, reasons for failure.

Herbert, David. Urban Geography: A Social Perspective, London: David & Charles, Newton Abott, 1972, 320 pages.

This book in the problems of modern geography reviews the contribution of social factors and patterns to the overall understanding of urban areas and their problems. After an introduction to the city as a topic of investigation and a consideration of urban problems such as transport, housing, and pollution, the following themes are presented: urban theory, the central city in western and non-western contexts; the residential structure of cities; factorial ecology; social patterns in cities (medical geography, delinquency and crime): and movement within the city. Examples are drawn from many parts of the world. An appendix deals with statistical terms and quantitative procedures.

Johnson, James. Urban Geography: An Introductory Analysis, London: Pergamon, 1972, 204 pages.

Chapters in this introductory textbook deal with the following themes: factors in urban growth; urban society and urban form; demographic characteristics of urban population; occupational characteristics; the location, size and spacing of urban settlements; the city center; residential suburbs; manufacturing areas in cities; and theories of urban structure.

Lloyd, Peter E. and Peter Dicken. Location in Space: A Theoretical Approach to Economic Geography, New York: Harper & Row, 1972, 292 pages.

The book is concerned with the theory of the location of economic activities, and with the geographical dimension of economic development. It is intended mainly for undergraduate work. An introduction considers the essentials of economic geography, model building and systems theory. Part One presents a simplified model of the economic landscape, with emphasis particularly on central places and agricultural production. Part Two introduces more complexities: it considers the effect of spatial variations in resource quality and availability, transportation costs and production costs. There are separate chapters on the agglomeration process, and on decision making. Part Three incorporates the time dimension; and examines the causes of spatial disparities in economic development and in economic health; here case studies of the U.S., Canada, U.K. and France are presented. The approach is problem oriented, but with reference to the preceding theoretical discussion. A final chapter looks at area development policies, drawing general lessons from an examination of those pursued in the above four countries. The overall approach is largely non-mathematical. There is a bibliography of over 400 references.

Kuklinski, Antoni. Growth Poles and Growth Centers, The Hague: Mouton & Co., 1972.

This volume is one of a series of studies arising out of the regional development program of the United Nations Research Institute for Social Development. It contains both conceptual-theoretical studies and empirical case studies of growth centers in a selected group of countries (India, Tanzania, Libya, Poland, Canada, and Sweden). Dr. Kuklinski, the editor, is the Director of the Institute's Regional Development Program.

Robinson, G. and Kamal B. Salih. "The Spread of Development around Kuala Lumpur: A Methodology for an Exploratory Test of Some Assumptions of the Growth-Pole Model," Regional Studies, 5 (4), 1971, pp. 303-314.

A development surface is visualized for a sector of the growth space of Kuala Lumpur. Its nature is discussed and a trend-surface model postulated as a test of the form of surface expected from the operation of growth-pole process. A set of hypothetical-development levels is generated for 80 villages and simple trend-surfaces of polynomial form are fitted. From this it is shown how analysis could proceed and how regional and local spatial components might be interpreted when development levels are seen as the products of interaction between the forces producing backwash and spread effects. It is argued that where low-order trends and their diviations, postulated on a priori grounds, reasonably describe the distribution of development levels, the operation of growth-pole processes at the regional scale can be confirmed. Discussion then centers around testing for consistency between pattern and process, and its place in an overall program for exploring the spread of development.

Runova, T. G. "The Role of the Resource Base in the Location of Extractive Industry," Soviet Geography: Review and Translation, 13 (5), 1972, pp. 282-293. Translated from the Russian, 1971, pp. 68-77.

Despite the close linkage with the resource base, extractive industry displays a pronounced tendency to be located in areas of raw material consumption. Simple regression analysis suggests a higher correlation coefficient between the distribution of extractive industry and explored reserves than between the industry and total estimated reserves. This alone bears out the significance of economic factors since geological exploration tends to be more active in developed areas than in underdeveloped regions. A four-group classification of resources is proposed in terms of the impact of the resource base on the location of the extractive industry. The analysis suggests that economic factors are particularly significant in shaping the distributional pattern of wide-spread bulk resource extraction while the resource base becomes the more significant factor in determining the location of extractive industry using less widespread, high-cost resources.

Schiller, R. K. "The Measurement of the Attractiveness of Shopping Centers to Middle Class Luxury Consumers," Regional Studies, 6 (3), 1972, pp. 291-297.

An attempt is made to measure the attractiveness of shopping centers to high income consumers. There is evidence that these consumers show marked relative preference for certain centers. Various ideas which could explain this are tested. It is suggested that centers attractive to middle-class consumers are those also attractive to tourists, having a pleasant or historical appearance and lacking the bustle of a modern commercial center. An index based on numbers of quality hotels and restaurants is found to give a good explanation of preference. When adapted as a weight in a gravity model application the result is an improved fit.

Shriner, R. D. "Pollution Control and Plant Location," A.I.D.C. Journal, 7 (2), 1972, pp. 39-42.

Not only locally different waste control regulations but even nationally uniform regulations will cause changes in the competitive positions of industries. Three hypothetical case studies are considered.

Standal, O., and B. G. Hutchinson. Notes for a Short Course of Practical Applications of Regional Development Models, Waterloo University, Ontario Transport Group, 1971, 147 pages.

A review of land use models for development of cities and regions is presented. Three levels of models are developed which are relevant to regional development planning, as follows: (1) macro models of regional development where the whole region is considered as a unit, (2) models of the allocation activities within a region where the development is observed relative to a set of individual zones, and (3) sector models, or one purpose models, such as transport and retail trade allocation models. Practical applications of equilibrium type models and selection of the best from a set of alternatives are discussed.

Zaloudek, Robert F. "Practical Location Analysis in New Market Areas," Stores, November 1971, pp. 15.

Retailers who are too small to employ a research staff can use a simpler procedure for location analysis. In broad terms, they should determine which factors explain success in present outlets, assemble data for prospective new markets, and then rate potential markets in light of the predetermined success factors. Procedures for gathering and analysis of data are presented in detail. These include checking with local planning agencies, use of census sources, and tours or aerial photos to get the feel of the market. Relevant factors are tabulated, refined to workable potentials, and plotted on maps to portray the dimensions of alternative markets. A final step is contacting real estate brokers to secure data on land costs, zoning, and other facts related to the site.

IV. ENVIRONMENTAL APPROACHES

A. Listings by Ann Freehoffer

Bosselman, Fred P., and David L. Callies. The Quiet Revolution in Land Use Control, Washington, D.C.: Council on Environmental Quality, 1971.

The "quiet revolution" discussed is a conceptual change in the government's role in land development. According to the authors' analysis, land is no longer viewed solely as a commodity. There is a drawing away from the nineteenth-century notion that the only function of land is to enable its owner to make money. A new trend is developing which views land as a resource which may serve a variety of purposes. This conceptual change coincides with an increasing awareness of the scarcity of land, and the realization that the land resource must be managed in an ecological framework of multiple needs.

The various methods of land use regulation in the different States are analyzed; the issues of local vs. State control, property rights, and uniformity throughout the nation are discussed.

McCahill, Ed. "Ecozoning: Wrong Approach, Right Idea," Planning, Chicago, Illinois: ASPO, September 1973.

An assessment of federal land use implementation tools (sanctions of enforcement) as they would vary given the exact nature of the final bill passed and the department (EPA or Interior) which is given implementation authority. Several planners in Virginia are quoted in the article expressing concern over the possible loss of local controls over land use policy and the vagueness of the requirements which will generate more paper work than necessary.

O'Mara, Paul. "The Coast Becomes Protected," Planning, Chicago, Illinois: ASPO, March/April 1973.

The scope of the article is a discussion of the provisions of California's Coastal Zone Conservation Commission, which has taken control of the development of California's coast out of local hands and by public referendum given it to regional commission which must review development proposals and grant or deny permission to construct. Some see the law as a virtual moratorium on any construction of the coast.

Committee Print. National Land Use Policy Legislation, 93D Congress: An Analysis of Legislative Proposals and State Laws, Committee on Interior and Insular Affairs, United States Senate, April 1973.

Includes an analysis of previous federal legislation related to land use: coastal zone management, energy facilities siting, surface mining: a comparison of the current bill on national land use which has passed the Senate with the corresponding House bill and the executive proposals. Land use laws from the States of Florida, Hawaii, Maine, Oregon, Vermont, and Washington, as well as the American Law Institute Model Code, are included in an Appendix with a chart comparing each to the national proposal.

Committee Print. National Land Use Policy: Background Papers on Past and Pending Legislation and the Roles of the Executive Branch, Congress, and the States in Land Use Policy and Planning, Committee on Interior and Insular Affairs, United States Senate, April 1972.

Hearings and speeches comprise the majority of this volume. One section about recent developments in the State land use planning is especially interesting in its comparison of how each state has implemented its land use plans. It also contains an extensive bibliography on land use and related environmental questions.

Senate Bill 268 (Jackson Bill), passed Senate June 1973.

Purpose of bill to establish a national land use policy, to authorize the Secretary of the Interior to make grants to assist the States to develop and implement State land use programs, to coordinate Federal programs and policies which have a land use impact, to coordinate planning and management of Federal lands and adjacent non-Federal lands, and to establish an office of Land Use Policy Administration in the Department of the Interior.

The Bill outlines extensive requirements of states who apply for the grants, including:

1. Land Use Inventories
2. Ecological Inventories
3. Citizen input in plan formulation
4. Preservation of critical environmental areas.

Heller, Alfred, ed. The California Tomorrow Plan, Los Altos, California: William Kaufmann, Inc., 1971.

The California Tomorrow Plan was developed by an interdisciplinary task force anxious to preserve the environmental quality of their State. Its scope is a statement of the problems that exist and persist if no action is taken (California Zero), and presents two alternative problem solving methodologies:

1. California One: traditional approach which has been used in the past and yielded the conditions of California Zero.
2. California Two: an approach to tomorrow which necessitates a reordering of priorities and a reallocation of resources.

Clawson, Marion. Suburban Land Conversion in the United States, Baltimore: Johns Hopkins, 1971.

The author deals with "land use in the suburbs, with particular emphasis on process, many public programs affecting the process of change in land use, market for suburban land, planning processes, land use controls, and housing problems. The last chapter offers a range of alternative means for improving the suburban land conversion process.

Council on Environmental Quality, 4th Annual Report, 1973, Washington, D.C.: U. S. Government Printing Office, 1973.

Highlights of topics covered:

1. The Urban Environment
 - a. Downtown - the City as the center of things
 - b. Neighborhoods - the City as a place to live
2. Cleaning up the Willamette
 - a. Water Quality Restored
 - b. Land Along the River
3. Economics and Environmental Management
 - a. Damage, avoidance, and transaction costs
 - b. Abatement costs
 - c. Making and implementing policies
4. The Law and Land Use Regulation
 - a. Prevalence of the problem
 - b. Traditional approach
 - c. Illustrative controversies
5. Perspectives on Environmental Programs: air quality; water quality; hazardous pollutants; noise; solid wastes; energy; land use.
6. Environmental Status and Trends: air pollution; water pollution; land use; population.
7. International Action to Protect the Environment.
8. The Citizen's Role in Environmental Improvement.

Ridgeway, James. The Politics of Ecology, New York: E. P. Dutton, 1970.

This is a collection of short reports on the oil industry, industrial water pollution, sewer-construction abuses, and the games corporations play with government at the expense of the environment. Ridgeway's suggestions for reform include an end to all incentives for the petroleum industry; the creation of a coherent policy for using the oil and gas deposits on the continental shelf; and a new leasing system for mining. He would require petroleum companies to give up their holdings in the chemical, coal, uranium, and consumer goods industries. The production of fuels and energy would be controlled and non-profit. He does not just ask for reforms; he suggests ways for attacking concentrated corporate power, the source of pollution.

Caldwell, Lynton K. Environment: A Challenge to Modern Society, Garden City, New York: Doubleday, 1970.

The author discusses how and why the ecological crisis should be made a major concern of public policy and how such a policy should function:

1. to alter the government's use of the environment, and
2. to alter each individual's attitude toward and use of the environment.

Davies, J. S., III. Politics of Pollution, New York: Pegasus, 1970.

Davies, a professor of politics and public affairs, discusses pollution as a political concept related to human use not to chemistry, biology, meteorology, limnology, and ecology. He gives a balanced picture of the conflicting economic pressures and political personalities that have shaped our pollution laws. Although strictly an orthodox political science study, the work is filled with insights into the give and take of our federal political process - the congressional and executive branches and their relations to state and local government, out of which must come the necessary legislation to provide enforcement. The book is a case history of democracy meeting a crisis whose magnitude is unparalleled in modern experience.

Timmons, John F. "Public Land Use Policy: Needs, Objectives, and Guidelines," Journal of Soil and Water Conservation, Vol. 27, No. 5, September-October 1972, pp. 195-202.

The need for a genuine land use policy is fast reaching crisis proportions. Broad discussion of the nature and scope, goals, and role of land use policy gives rise to

the following guidelines for establishing such a policy: stating of goals; providing flexibilities; encouraging experimentation and innovation; providing for planning, research, and evaluation; preventing fragmentation, duplication, and conflicts; providing for complementary roles by government; institutionalizing incentives; internalizing costs; considering all uses and all natural resources; selecting technologies; and modifying property and responsibility concepts.

Ruckelshaus, William D. "New Horizons in Land Planning," speech given in Anaheim, California, October 16, 1972.

Question is whether planning process will leave major role for the states and local communities or take a more drastic national form. President Nixon has proposed legislation which would provide \$100 million during the next 5 years to help the states assume land-use planning and regulatory authority over the most critical and diminishing of land assets. States would be empowered to override local government wherever its land-use decisions would have more than local significance. Further details are discussed and land planning in general is considered as an ecological subject.

Croke, E. J., et. al. "The Relationship Between Land Use and Environmental Protection," NTIS Report #PB-209-642, March 31, 1972.

The case is outlined for integrating land use planning and regulation with environmental protection. Some of the legal, institutional, organizational, and technical aspects of this approach to the preservation of environmental quality are described. There is a growing recognition of the need to subject public and private decisions regarding land use to a much closer scrutiny with regard to their environmental implications. An array of evaluative techniques now used either for land use planning or for environmental planning may be of potential use in formulating environmental land use policies. If land use guidelines and environmental protection objectives are to be integrated, programs for merging the procedures and practices of groups involved in these functions must be developed.

Iowa Governor's Committee on Outdoor Resources, Mendell, Frank H.
"Developing a State Land Use Policy," Journal of Soil and
Water Conservation, V. 27, No. 5, September-October 1972,
p. 194.

States should not delay in giving land use policy the serious consideration it deserves. Factors states must consider in writing their own land use policy legislation are: comprehensive planning; access to information by all interested citizens; and feedback mechanisms. Actual development of land use policy legislation can be divided into 3 sequential steps:

1. declaration of why a policy is needed;
2. establishment of criteria;
3. delineation of an organizational structure.

Knickerbocker, Brad. "Land-Use Pressures Jostle Vermont,"
Christian Science Monitor, January 24, 1973, p. 8.

In 1970, the Vermont legislature passed a package of environmental laws designed to slow down the wave of development that followed the ski boom of the 1960's. The Environmental Control Act also called for a statewide plan to chart future development and land use. To avoid "hit and run development" and to "halt the wave of despoilation" planners say towns must change their image from tolerant to inchoate, shabby building to that of an effective community which insists upon the best practices of development. The trend is toward statewide influence, if not control, of land use.

Hill, Gladwin. "California's Venture in Regulation of Coastline
Land Use vs. Gearing Up - and Confronting Problems,"
New York Times, February 11, 1973, p. 14.

The newly-created California Coastal Zone Conservation Commission, one of the nation's boldest ventures in land use planning, found itself facing many problems at its first meeting, including: how to cope with an impending avalanche of building-permit applications, how to stretch the commission's statutory \$5 million budget over the next four years, and what to do about a big oil company that was punching holes in the coastal crust without a commission permit (the company has since stopped).

Davis, Hugh C. "The Recreation-Resource Inventory Process for State and Regional Plans," Recreation Symposium Proceedings, Northeastern Forest Experiment Station Forest Service, U. S. Department of Agriculture, Upper Darby, Pennsylvania, 1971.

The establishment of guidelines for identifying recreation resources in the inventorying process should be limited to conditions and characteristics of the natural resources themselves. This requires not only that we define recreation, but also that we prescribe the combination of resources necessary to carry on a variety of recreational activities.

Beardsley, Wendell G. "The Economic Impact of Recreation Development: A Synopsis," Recreation Symposium Proceedings, Upper Darby, Pennsylvania: Northeastern Forest Experiment Station Forest Service, U. S. Department of Agriculture, 1971.

Economic impacts per dollar of tourist expenditure have generally been found to be low compared to other economic sectors in local less-developed areas where recreation development is often proposed as a stimulus for economic growth. Tourism, however, can be economically important where potential or existing recreation attractions can encourage tourist spending in amounts large enough to offset these lower per-dollar impacts. In addition to definitions useful in interpreting the results of impact studies, findings from several investigations of local effects of recreation spending are discussed.

Kneese, A. V. and P. T. Bower. Environmental Quality Analysis: Theory and Method in the Social Sciences, Baltimore: Johns Hopkins, 1972.

Series of papers presented at the Resources for the Future Conference organized around three main themes--understanding environment and economic growth, developing management programs, and designing political and legal institutions. Several topics are dealt with: models for regional management of discharges, institutions proposed for regional environmental quality management, and the application of community power-structure techniques to the northeastern U.S. megalopolis.

Lapping, Mark B. "Planning in Vermont: New Legal Horizons," Alternatives, V. 2, No. 2, Winter 1973, pp. 10-15.

Planners and conservationists in Vermont are launching a counter-offensive aimed at reducing the adverse environmental impact exerted on the state by the heavy influx of new residents and vacationers. In an effort to preserve endangered open spaces, scenic vistas, and the uncluttered country-side, Vermont legislators and ecoactivists are drafting bills that would set strict standards on population growth and land allocation.

B. Listings by William F. Ruska, Jr.

Baldwin, Malcolm F. Public Policy on Oil: An Ecological Perspective, Washington, D.C.: The Conservation Foundation, November 1971, 63p.

This publication explores environmental problems caused by petroleum production and by oil's ultimate scarcity. The author identifies the failures of U.S. policy and law to account for environmental impacts of oil extraction and use. A better understanding of the relationship between oil policy and ecological processes is advanced through this publication, especially in regard to new procedures and restraints in the petroleum industry.

Belknap, Raymond K. and John G. Furtado. Three Approaches to Environmental Resource Analysis, Washington, D.C.: The Conservation Foundation, 1967, 101p.

Examines three methodologies for identification, analysis, and evaluation of natural resources. The methods and techniques of G. Angue Hills, Philip H. Lewis and Ian McHarg are critically reviewed in terms of: (1) how the methods identified environmental and spatial patterns beyond single-factor analysis and simple spatial location, (2) how key elements forces lending quality to the physical environment were identified, (3) how analysis material was reviewed for incorporation into the planning process, and (4) whether the environment was treated as a resource per se or only in terms of the given planning purposes.

Berg, George G. "Hot Wastes from Nuclear Power," Environment, Vol. 15, No. 4, May 1973, pp. 36-44.

Fuel reprocessing is a necessary stage in the nuclear fuel cycle. This article reviews the activities of a fuel reprocessing plant in West Valley, New York. The article covers the plant's supervision, safety record, performance and impact.

Bisselle, C. A., et. al. National Environmental Indices: Air Quality and Outdoor Recreation, prepared by Mitre Corp. for the Council on Environmental Quality, Springfield, Virginia: National Technical Information Service, April 1972, 253p.

Separate indices of air pollution and outdoor recreation were formulated and computed for selected cities in the U.S. Guidelines for implementation of an operational data collection and reporting system to allow routine computation of indices are also contained in the report. The results of this study were prepared for use by the Council on Environmental Quality in preparing its Third Annual Report.

Broun, Richard H. "HUD's Environmental Role," HUD Challenge, January 1973, pp. 10-12.

Discusses HUD's concern for the quality of the built environment and three main strategies for implementing consideration of environmental goals in the statewide, areawide and local comprehensive planning process. Includes a synopsis of HUD's response to achieve goals set forth in the National Environmental Policy Act of 1969.

Brown, J. A. "A Critical Analysis of the Federal Environmental Impact Statement," unpublished Master of Science Thesis, V.P.I. & S.U., 1972.

The author reviews pertinent federal legislation that preceded the passage of the National Environmental Policy Act. He reviews the procedures used by the U. S. Geological Survey, the Atomic Energy Commission and the Bureau of Reclamation and evaluates their formats in light of the requirements as stated in NEPA. Finally, he conducted a case study which involved a critical evaluation of the Environmental Impact Statement for Carolina Power and Light Company's Brunswick Nuclear Steam Electric Plant near Southport, North Carolina.

Clinkenbeard, Harlen E. "Integrating Natural Resources into Areawide and Local Planning: The Southeastern Wisconsin Experience," Journal of Soil and Water Conservation, January-February 1973, pp. 32-35.

Traditionally, preparation of land use plans only included urban uses (e.g., residential, commercial, industrial, etc.). Agricultural land was usually classified as "vacant" or "undeveloped" land and ignored in detailed analyses relating to plan development. This paper describes the Southeastern Wisconsin Regional Planning Commission's experience in incorporating natural resources considerations into the planning process. Based on their experiences, six conclusions are presented which are directed at the establishment of information which is usable by all concerned in planning activities.

Commoner, Barry. "Alternative Approaches to the Environmental Crisis," AIP Journal, May 1973, pp. 147-162.

The author compares the results of two qualitatively different types of analyses of the resource-environmental quality problems. The first is the approach accepts as given, world statistical summaries of trends in population size, agricultural and industrial production, and rates of pollutant emission (e.g., The Limits of Growth). These trends are extrapolated into the future and the outcome is determined by means of a computer model that assumes certain interactions among them. The second approach, illustrated in this article, assembles data on the scale on which, in the real world, this relevant system operates and derives from these data the relationships that appear to govern the interactions among the various parameters. This leads to generalizations concerning the mechanisms that mediate the interdependence of society and the earth's resource.

- Cook, David I. and David F. Van Haverbeke. "Trees, Shrubs, and Landforms for Noise Control," Journal of Soil and Water Conservation, November-December 1972, pp. 259-261.

Tape recorded and actual sounds of traffic were used at rural and urban test sites to determine the sound attenuating properties of trees and shrubs. Tentative results of a companion study of combinations of trees, shrubs and landforms for noise control are also given. Six recommendations for selection and optimum placement of tree structures are presented as well as tentative recommendations for forested landform size and placement.

- Cooper, Charles F. "Man's Impact on the Biosphere," Journal of Soil and Water Conservation, July-August 1970, pp. 124-127.

Discusses confronting the dual challenges of maintaining environmental quality and feeding a burgeoning population. This will require an efficient linking of modern technology and age-old ecological imperatives.

- Guber, John F. "Ecotactics: The Critical Link: An Analysis of Values in Conflict," The International Journal of Environmental Studies, Vol. 3, 1972, pp. 23-28.

The critical impasse in implementing present know-how in environmental rehabilitation is sociological rather than technological. Established habits and values in the advanced cultures are destructive rather than protective of the biosphere. This is especially true of the more affluent classes and nations. This paper consists of an analysis of this impasse and of a discussion of some strategies for breaking or circumscribing it. The discussion is cast in terms of an established analytical scheme for investigation of other social problems, but gives primary attention to its application to environmental conservation and rehabilitation.

- Davidson, Karl A. "A Method of Comparing Forest Production Data to Agricultural Data in River Basin Planning," Journal of Soil and Water Conservation, January-February 1972, pp. 20-23.

A graphic method of determining forest production, projected yields, and production and harvesting costs for forest crops. The technique allows conversion of forest production data to annual per acre values comparable to values used for farm crops. This resulted in relative budgets on 14 soil groups referred to as soil resource groups.

Dee, Norbert and Howard Reiquam. "Comprehensive Environmental Analysis," Battelle Research Outlook, Vol. 4, No. 2, 1972, pp. 25-31.

Describes the problems of approach, data and analysis that currently plague comprehensive environmental analysis. This paper describes the methodology for environmental assessment which was developed for the Bureau of Reclamation. This hierarchical approach, the Environmental Evaluation System, attempts to promote a balance between the specialist and generalist approaches to environmental impact analysis, as well as environmental planning. Figure 1 is especially useful for quick understanding of the structure of the methodology.

Ditton, R. B. and Thomas L. Goodale, eds. Environmental Impact Analysis: Philosophy and Methods, Proceedings of the Conference on Environmental Impact Analysis, Green Bay, Wisconsin, January 4-5, 1972, Madison, Wisconsin: University of Wisconsin SEA Grant Programs, 171p.

An anthology of papers presented at the Conference. Broad topics include: The Impact of NEPA, Two Years of Labor and Learning, Other Environmental Impact Perspectives, Some Impact Dimensions, Environmental Impact Assessment - each with a number of papers. An excellent overview of NEPA and the SIS.

England, C. B. "Watershed Models: Tools in Planning Land Management for Water and Pollution Control," Journal of Soil and Water Conservation, January-February 1973, pp. 36-38.

Due to the complex interdisciplinary nature of predicting watershed performance, comprehensive mathematical models have been developed in agricultural hydrology. This paper briefly describes a new digital computer model for continuously simulating all hydrologic processes in complex agricultural watersheds. The model accounts for the disposition of measured precipitation to surface storage, infiltration, evapotranspiration and subsurface and surface flows. Soil differences and land use effects are built into the model so that by changing the appropriate parameters, the effects of land use changes or engineering structures can be simulated for water flow throughout the entire system. Briefly describes several test applications of the model on experimental watersheds which contrasted sharply in soils, land use and climate.

Environmental Protection Agency. Land Use and the Environment: An Anthology of Readings, Office of Research and Monitoring, Environmental Studies Division, 1973, 199p.

An informative collection of papers concerning the relationship of land use with environmental quality. Major sections include: Land Use Concepts, National Land Use Policy, State Land Use Environmental Policies, Application (open spaces, air pollution, noise and transportation, and waste water).

. Our Urban Environment and Our Most Endangered People.
.. Report to the Administrator of EPA by the Task Force on Environmental Problems of the Inner City. Washington, D.C.: U. S. Government Printing Office, September 1971, 173p.

This report is organized into four parts: Part One presents the overview delineating problems as interpreted by the Task Force, including recommendations for action. Part Two is a subjective narrative and factual profile of inner city conditions. Part Three covers the program areas of solid waste, air, water, noise, and pesticides, including the problem, program and recommendations. Part Four consists of recommended interrelated programs for EPA as program responsibility.

. The Quality of Life Concept: A Potential New Tool for Decision-Makers, Office of Research and Monitoring, Environmental Studies Division, March 1973, 300p.

The first section of this book summarizes the results of a symposium hosted by EPA to explore the "Quality of Life" concept, to define QOL in terms of its components, and to develop suggested quantitative approaches to its use in guiding public policy. Section two is a revised version of an anthology prepared for symposium participants. The papers in this section represent varying approaches and levels of consideration of the concept rather than definitive review of the literature in the field.

Esposito, John C. Vanishing Air, New York: Grossman Publishers, Inc., 1970, 328p.

Ralph Mader's study group report on air pollution. Especially interesting are the chapters on the auto industry and the development of the Clean Air Act.

Forbes, Ian A., et. al. "Cooling Water," Environment, Vol. 14, No. 1, January-February 1972, pp. 40-47.

The authors state that emergency cooling systems which are indispensable to nuclear reactor safety may be unable to perform adequately and that the margin of safety previously thought to exist in these systems may be nonexistent. They conclude that the scale of a possible catastrophe is such that they cannot support the licensing and operation of any additional power reactors in the U.S., irrespective of the benefits they would provide.

Green, Harold P. The National Environmental Policy Act in the Courts, Washington, D.C.: The Conservation Foundation, May 1972, 31p.

This monograph analyzes NEPA in the courts. The material is structured in a manner that is helpful to both lawyers and layman. It objectively describes the meaning and requirements of NEPA, and the manner in which the provisions of NEPA may be enforced through privately initiated litigation in the light of the existing body of judicial decisions.

Grogerson, Hans M. "The Role of Forestry in Regional Economic Development," Journal of Forestry, February 1973, pp. 98-99.

Points out that forestry's contribution to the economic well-being of a region has been highly variable depending on the region. Author argues that what is relevant in looking at its role in economic development is its relative impact on the region, given the region's assets and other activities. Eight main points of agreement are summarized from the views of a variety of experts in the field. Concludes that there is a need to go deeper into the problems of a region and examine the available alternatives prior to stating the generality that "the role of forestry in regional development is not as positive as conventional wisdom implies."

Guy, Harold P. and George E. Ferguson. "Stream Sediment: An Environmental Problem," Journal of Soil and Water Conservation, November-December 1970, pp. 217-222.

Unlike the continuing erosion on agricultural lands not checked by soil conservation practices, construction sites erode mainly during the brief periods between land clearing, shaping and stabilization of the new surface. However, the sediment released may have a lasting effect on the channel shape as well as the aquatic environments downstream. This paper discusses the magnitude of this problem and presents two case histories. It concludes with a discussion of the problems encountered in attempting to alleviate the problem.

Hackett, James E. and William F. Ruska. Survey of Methods for Environmental Impact Assessment, Division of Environmental and Urban Systems, V.P.I. & S.U., May 1973, mimeo.

The purpose of this survey research was to identify and summarize the various available methods for conducting resource evaluation and/or environmental impact analysis. A review and analysis of each method was presented with regard to the basic process common to all acceptable methods, comprehensiveness of approach, type of method, and the relevancy to water resources projects. Included are four basic types of methods: (1) the Descriptive Approach with five representative examples, (2) the Matrix Approach with three examples, (3) the Index Value Approach with five examples, and (4) the Computer Approach with three examples. In addition, three other approaches are provided, including an environmental cost-benefit approach.

Haskell, Elizabeth. "New Directions in State Environmental Planning," AIP Journal, July 1971, pp. 253-258.

This paper categorizes state environmental planning activities by four types: (1) Resource Planning where the focus is on a natural resource such as forests, fisheries, etc., (2) Functional Planning where the focus is on an objective such as water pollution control, (3) State Policy and Program Planning where the focus is on particular resources or functions that figure into state policy, and (4) Project Planning where the focus is on production of engineering plans for construction of particular facilities. Discusses Vermont's statewide land use control program and Maryland's efforts toward control over solid and liquid waste treatment. The article concludes that a state government's unique middle layer perspective appears well-suited in relation to effective environmental management and planning.

Hufschmidt, Maynard M. "Environmental Quality as a Policy and Planning Objective," AIP Journal, July 1971, pp. 231-242.

Environmental quality can be considered as one of several partially conflicting goals of national policy. Some of its elements are incorporated in goals for economic growth and public health, but amenity and ecological values must be treated separately. This paper suggests the multiple-objective approach in dealing with environmental quality as a policy and planning objective. The paper reviews various means for achieving environmental quality goals, from indirect strategies such as environmental monitoring and public information to direct strategies such as direct governmental controls.

Isberg, Gunnar. "Controlling Growth in the Urban Fringe," Journal of Soil and Water Conservation, July-August 1973, pp. 155-161.

Discusses patterns of urban growth and problems caused by leapfrog growth. Several methods for controlling development are summarized such as (1) agricultural or large-lot zoning, (2) extra-territorial zoning, (3) PUD and new town development, (4) tax deferral and abatement laws, and (5) utility extension policies. A matrix table is presented which lists 17 types of development controls, showing which are applicable for protecting various categories of natural resources such as wetlands, floodplains, ground water, steep slopes, etc.

Krochalis, Richard F. "Statewide Land Use Planning," Urban Land, September 1972, pp. 8-13.

Excellent summaries of Vermont's and Maine's legislation toward statewide land use planning. Discusses general provisions, administration, and permit criteria of each.

Kurtsweg, Jerry A. "Urban Planning and Air Pollution Control: A Review of Selected Recent Research," AIP Journal, March 1973, pp. 82-92.

Discusses recent federal legislation that requires greater consideration of the air pollution problem in the development and implementation of planning programs. Discusses several recent sponsored research efforts which are among the first having as a primary objective the development of procedures and the provision of data that will enable more precise evaluation of air pollution consequences of planning actions. However, the results have not yet been translated into procedures for routine use by planning organizations. In some instances, the general applicability of the results still remains to be tested.

Library of Congress. Congress and the Nation's Environment: Environmental and Natural Resources Affairs of the 92d Congress, prepared by the Environmental Policy Division, Congressional Research Service for the Committee on Interior and Insular Affairs, U. S. Senate. Washington, D.C.: U. S. Government Printing Office, January 20, 1973, 1145p.

This report summarizes the environmental and natural resources activities of the 92d Congress. The separate chapters are grouped under three main sections: (1) natural resources, (2) pollution, and (3) management aspects. A concluding chapter is devoted to proposed modifications relating to the provisions of NEPA. Each chapter entails a concise summary analysis of congressional effort in a given policy area, e.g., energy and fuels, land use planning, water resources, and parks, recreation, wilderness, etc.

Like, Irving. "Tuning Down the GNP," Environment, Vol. 15, No. 6, July-August 1973, pp. 6-14.

The author states that the Federal Reserve System exercises vast powers without taking into consideration or disclosing their environmental impact. NEPA can and should be used to review the impact of federal exercise of economic powers which significantly influence the GNP. The author hopes that his thesis will stimulate research into the applicability of NEPA to the operations of all federal agencies which exercise fiscal, monetary, spending, or taxation powers as they relate to the environmental impact of the economic growth premise.

Madsen, Howard C., et. al. "Future Allocation of Land and Water: Implications for Agricultural and Water Policies," Journal of Soil and Water Conservation, March-April 1973, pp. 52-60.

The article discusses changes in agriculture, the beginning of compensation policies, and policy conflicts and the nature of the problem. A linear programming model was designed to isolate the effects of changes in certain major variables with the objective of minimizing the cost of meeting domestic and export demands for food and fiber, given land and water resources. Six policy models were analyzed and the following were evident from the results: (1) land should not be a physically or economically scarce resource in the year 2000, (2) with a national objective of economically optimum food production and land and water use, the irrigated land acreage in the West would be less than present, and (3) relative to this economic objective, water would be in surplus supply in the West. Policy implications based on the results are discussed.

"Managing Steep Land." Journal of Forestry, Vol. 71, No. 5, May 1973, pp. 264-286.

Five articles on the management of steep land are included in this special issue:

1. "Stability of Steep Land," D. N. Swanston and C. T. Dyrness;
2. "Managing Steep Land for Timber Production in the Pacific Northwest," H. C. Sommer;
3. "Interdisciplinary Planning for Recreation Needs," R. Feuchter and H. P. Wingle;
4. "Soil Inventory for Steep Land," M. E. Stevens and W. A. Wertz;
5. "Soil Constraints on Logging Road Construction on Steep Land-East and West," W. J. Kidd and J. N. Kochenderfer.

McGaul, Julian. "The Tide of Industrial Waste," Environment, Vol. 14, No. 10, December 1972, pp. 30-39.

One third of all stream pollution in the U.S. is attributed to industry. Some segments of industry are turning to new materials or techniques to speed production at the cost of increased environmental degradation. It appears in the immediate future, increased environmental pollution will be caused by organic chemical contamination. Reliance on waste treatment systems to purify industrial effluent has been disappointing while the science of waste treatment has lagged far behind the capacity to produce complex and voluminous industrial pollutants.

McCormack, R. J. "The Canada Land Use Inventory: A Basis for Land Use Planning," Journal of Soil and Water Conservation, July-August 1971, pp. 141-146.

This article discusses the Canada Land Inventory which is being used increasingly by the federal and provincial governments as a basis for land use planning and policy formulation. Presents short descriptions of the objectives and scope of the program, in addition to its organization and methods. Through a series of tables, the National Classification Systems are presented for: (1) soil capability for agriculture, (2) land capability for forestry, (3) land capability for outdoor recreation, (4) land capability for wildlife - both ungulates and waterfowl.

McLean, Mary. Planning for Solid Waste Management, ASPO Planning Advisory Service Report No. 275, December 1971, 52p.

This publication is designed to provide the planner with a brief overview of the solid waste problem and provide assistance and direction in planning and zoning for land disposal sites. It discusses briefly the results of the National Solid Wastes Survey and presents examples of a regional and county solid waste inventory. Disposal practices are discussed. In the planning of sanitary land-fill sites, components presented include: site size, geologic environment, effect on the natural environment, use of derelict land, land use surrounding site, sanitary land-fill afteruse and the zoning problem. An annotated bibliography is included which lists references under four topics: General References, Systems Approach, Local and Regional Reports, and Particular Aspects.

Meshenberg, Michael J. "Environmental Planning: 1, Environmental Information for Policy Formulation," ASPO Planning Advisory Report No. 264, November 1970, 52p.

Discusses reasons why environmental quality should be given greater attention in the planning process and enumerates data which should be collected and analyzed for inclusion in comprehensive plans. Table 1 (pages 30-34) lists tolerance and suitability of environmental features to development, basic information of use to environmental planners detailing permitted associated uses and restrictions on uses in relation to environmental features such as soils, physiography, vegetation types, etc.

Meshenberg, Michael J. "Environmental Planning: 2, A Selected Annotated Bibliography," ASPO Planning Advisory Service Report No. 264, December 1970, 79p.

A comprehensive, annotated list of references on various aspects of environmental planning. Subjects range from general environmental issues and problems, ecology, and population to soil surveys, geology, floodplain management, and landscape analysis. Most references cover the period 1960-70.

Midwest Research Institute. Resource Recovery: The State of Technology, prepared for the Council on Environmental Quality, Washington, D.C.: U. S. Government Printing Office, February 1973, 67p.

This survey and analysis of the present status of technology for resource recovery (recycling) from mixed municipal wastes shows that the national goal expressed in the Resource Recovery Act of 1970 has been perceived by the government and industry as worthy of substantial commitment. Includes two major sections: (1) a technical review of resource recovery processes, and (2) a summary of the economics of basic resource recovery processes.

Nichols, Donald R. and Catherine C. Campbell, eds. Environmental Planning and Geology, Proceedings of the Symposium on Engineering Geology in Urban Environment-1969, Washington, D.C.: U. S. Government Printing Office, 1971, 204p.

A compilation of papers presented and discussions held at this symposium which was attended by geologists, planners, developers, landscape architects and public officials. The anthology is organized into three main parts: (1) problems to be faced, (2) distribution of responsibility for solving the problem, and (3) the use of engineering geology in urban planning.

O'Flaherty, C. A. "People, Transport Systems and the Urban Scene: An Overview-II, International Journal of Environmental Studies, Vol. 3, 1972, pp. 307-320.

The second part of a paper examining the problem of transport in towns, with particular relevance to the relationship between the motor vehicle and the urban environment. This part stresses transport and land use developments likely in the near future, and the manner in which they can best be encouraged so as to improve the urban environment. The key to the reconciliation between transport needs and environmental ones is considered to be "separation." Suggestions are made with regard to times and locations at which "separation" procedures can be utilized so that movement in the urban area can be more desirably related to environmental considerations.

Othmer, Donald F. and James R. Pfafflin. "Solution to Pollution No Longer Just Dilution," Catalyst for Environmental Quality, Vol. 3, No. 1, 1973, pp. 15-?

The authors state that the first step in the direction of reasonable and durable solutions is awareness by both municipal and corporate officials of the technology available for abatement of water pollution. They review primary, secondary, and tertiary treatment and briefly summarize some recently patented processes.

Penning-Rowell, E. C. and D. I. Hardy. "Landscape Evaluation and Planning Policy: A Comparative Survey in the Wye Valley Area of Outstanding Natural Beauty," Regional Studies, Vol. 7, No. 2, June 1973, pp. 153-160.

Although landscape quality is recognized as a resource of increasing value techniques for its assessment are as yet unsophisticated and untested. The survey had three objectives: (1) comparison of existing methods of landscape evaluation, (2) comparison of landscape assessments made in the field with existing official designations of the area, and (3) focus attention on the relationship between the use of landscape evaluation techniques and implementation of grant-aided landscape improvement schemes within other areas. Three techniques were surveyed, the first two consisted of individual and collective subjective opinion ratings while the third entailed detailed field work, basic criteria establishment, and weighting factors. It was concluded that none of the methods were ideal due to excessive flexibility and insufficient emphasis on the ranking of landscape user's preferences for certain features. However, the authors point out that the methods can be used with some degree of success to designate potential areas and to establish priorities for implementation of improvement schemes.

Professional Training Subcommittee, Environmental Conservation Education Division, Soil Conservation Society of America. "Natural Resources and Environment, 1970-71: A Bibliography," Journal of Soil and Water Conservation, July-August 1972, pp. 1-B - 8-B.

Headings of this bibliography include: General, Air, Forests, Grasslands, Human Populations, Soil, Water, Wildlife, Agriculture, Ecology, Land Use, Law, Legislation, Outdoor Recreation, Pesticides, Pollution, Radioactivity, Solid Wastes, Wilderness, Agencies, History, Readings, and Bibliographies.

Ressler, Remford A. "Clearcutting: Beneficial Aspects for Wildlife Resources," and

Pengelly, W. L. "Clearcutting: Detrimental Aspects for Wildlife Resources," Journal of Soil and Water Conservation, November-December 1972, pp. 250-258.

Clearcutting as a forest management technique is an emotional, not well understood practice for many. These adversary positions present the beneficial and detrimental aspects in a short, but informative, narration.

Resources for the Future. "Environmental Matrix: A Conceptual Tool to Help Unravel the Environmental Tangle," Annual Report for the year ending September 30, 1972. 1755 Massachusetts Avenue, N.W., Washington, D.C., 20036, pp. 83-86.

Incorporates in a single table many of the basic conclusions of To Live On Earth, a recent RfF study of man's relation to the natural environment. The vertical axis concerns environmental problems by order of gravity: (1) amenity considerations, (2) human health effects, (3) human genetic and reproductive effects, and (4) effects on ecological systems and the earth's life-supportive capacity. The horizontal axis concerns the following components: (a) causative factors, (b) character of insult, (c) problem of threshold, (d) area affected, (e) appropriate management level, (f) possible economic approaches, (g) possible institutional approaches, (h) possible technological approaches, and (i) efficacy of possible value change bringing.

Roberts, James A. "Just What Is An Environmental Impact Statement," Urban Land, May 1973, pp. 9-15.

Briefly discusses the National Environmental Policy Act and the California Environmental Quality Act which require Environmental Impact Statements for federal- and state-supported projects respectively. Describes the role of the EIS in the development planning process, criteria, form and content of the statement. Table 3 presents an excellent flow chart of the impact report process.

Roberts, William H. and Jonathan Sutton. "Seeking the Right Environmental Fit for a New Resort Community at Amelia Island, Florida," Landscape Architecture, April 1973, pp. 239-250.

Presents an environmental evaluation matrix for residential land uses. Accompanying full color graphics portray how the master plan was conceived from base ecological inventory through data interpretation and locational suitabilities.

Rosenberry, Paul E. and W. C. Moldenhauer. "Economic Implications of Soil Conservation," Journal of Soil and Water Conservation, November-December 1971, pp. 220-224.

Public policy has encouraged farmers to practice soil conservation. However, there are many obstacles, mostly economic, to be overcome. This article relates obstacles to acceptance of soil conservation practices, changing attitudes, research needs, and program alternatives.

Schurr, Sam H. Energy Research Needs, Resources for the Future, Inc., Washington, D.C.: U. S. Government Printing Office, October 1971.

A lengthy report prepared for the National Science Foundation to aid in defining research needs in the field of energy. Chapter IX details the environmental effects of various sources of energy production and consumption on: (1) climate and weather, (2) effects of thermal pollution, (3) effects of surface coal mining, (4) effects on health, and (5) effects of oil pollution on the ocean. Control measures and economic aspects are discussed as well as the most pressing research needs.

Seaborg, Glenn T. "Energy and Environment," The International Journal of Environmental Studies, Vol. 3, No. 4, September 1972, pp. 301-306.

Discusses the various alternatives to satisfying growing energy needs while at the same time restoring and preserving the natural environment. The environmental impact of nuclear wastes and radiation exposure are reviewed.

Sewell, W. R. and Brian R. Little. "Specialists, Laymen and the Process of Environmental Appraisal," Regional Studies, Vol. 7, No. 2, June 1973, pp. 161-171.

While environmental impact statements have assumed increasing importance in recent years, little is known about factors influencing the process of environmental appraisal which underlies these statements. This paper examines specialization as one critical factor of the process and indicates the role it can play in undermining the presumed objectivity of appraisals. A conceptual framework for looking at the process as a socially legitimated form of environmental construing is set forth. The authors stress that the formulation of environmental impact statements represents a major advance in resources management and regional development policy-making. However, they state their accuracy and representativeness are seriously jeopardized where appraisal is merely the product of an overly-specialized mode of consulting. They conclude that the nature of impact staters would seem to deserve as rigorous an analysis as the impact statements themselves.

Stankey, G. H. "Tyths in Wilderness Decision-Making," Journal of Soil and Water Conservation, September-October 1971, pp. 183-188.

Discusses the questions: are wilderness users a wealthy elite whose incomes afford them opportunities to use areas that less wealthy people are denied? Is wilderness compatible with the concept of multiple use? Are we heading toward a situation where a preponderant share of our public lands will be locked up in wilderness? The section concerning the relationship between leisure time and length of stay, and wilderness management challenges are especially useful to those concerned with recreation planning.

Sullivan, James B. and Paul A. Montgomery. "Surveying Highway Impact," Environment, Vol. 14, No. 9, Nov. 1972, pp. 12-20.

Since most highway environmental impact statements have been incomplete, this article details what a highway EIS must contain. Table 1 presents an excellent summary of required contents and responses based on a survey of 76 final statements.

Sumek, Lyle. Environmental Management and Politics: A Selected Bibliography, Northern Illinois University, Center for Governmental Studies, January 1973, 74p.

A comprehensive bibliography of the knowledge base in the environmental policy area. Includes eleven basic sections with a total of over 800 entries which are cross-indexed.

- U. S. Congress. House. Committee on Merchant Marine and Fisheries. Administration of the National Environmental Policy Act-1972. Appendix to Hearings before the Subcommittee on Fisheries and Wildlife, U. S. House of Representatives, 92d Cong., 2d sess., February 17, 25 and May 24, 1972, 1887p.

This is the most comprehensive document concerning the various federal agencies' responses to NEPA under one cover. Contains agency guidelines, criteria, methods for impact assessment, and pertinent correspondence outlining research and evaluation techniques. A valuable reference in regard to NEPA.

- U. S. Council on Environmental Quality. Guidelines. "Preparation of Environmental Impact Statements," Federal Register, Vol. 38, No. 147, August 1, 1973, pp. 20550-20562.

Most recent guidelines issued by the Council on Environmental Quality concerning preparation of Environmental Impact Statements. Appendix II contains a comprehensive listing of federal agencies with jurisdiction by law or special expertise to comment on EISs by categories such as air, water, fish and wildlife, radiation, etc.

- U. S. Department of Housing and Urban Development. Environment and the Community: An Annotated Bibliography, Washington, D.C.: U. S. Government Printing Office, April 1971, 66p.

Covers 16 subjects including: ecology, environmental quality, environmental planning, land use, pollution, etc. Also lists suggested periodicals with addresses and subscription rates.

- White, Donald J. and Eric J. Kresse. "Planning to Save Natural Resources in Residential Development," Journal of Soil and Water Conservation, July-August 1972, pp. 152-159.

Describes a technique developed for use in a bi-county environmental housing program that considers the importance of natural resources in residential development and illustrates how resource information can be incorporated into site plans. The site analysis of an 80 acre tract of land consisted of a situation description and considerations applied to each of the following: roads, bedrock, soils, slope, surface drainage, vegetation, and scenery.

- White, G. F. "Flood-loss Reduction: The Integrated Approach," Journal of Soil and Water Conservation, September-October 1970, pp. 172-176.

Contains a summary of action recommended by the Task Force on Federal Flood Control Policy.

Wohlers, H. C. "The Air Pollution Labyrinth." The International Journal of Environmental Studies, Vol. 3, 1972, pp. 29-33.

Combustion effluents are considered the single major cause of air pollution throughout the world. For the future, the combustion problem will become more acute as developing countries become more industrialized. To control combustion products from fossil or atomic fuels for a rising world population and affluence, a more regimented society is visualized. In the future, scientists must play a leading role in evaluating the total effects of all new technological developments, including as yet unforeseen sources of energy.

Wohletz, L. R. and W. E. Wildman. "Land Use Planning by Foresight or Hindsight," Journal of Soil and Water Conservation, July-August 1971, pp. 135-137.

Resource leaders in California are stressing the use of soil data as a basis for land use planning. Describes a series of land use planning conferences which were held to promote this concept. Presents a conceptual diagram of the relationship between soil facts and land use interpretations.

Zube, Ervin H. "Evaluating the Visual and Cultural Landscape," Journal of Soil and Water Conservation, July-August 1970, pp. 137-141.

Pertains to the North Atlantic Regional Water Resources Study whose purpose was to plan for the optimum development and use of water and land related resources to the year 2020. A significant feature of the study is its consideration of visual and cultural values in decision-making, an approach which pointed to three areas of emphasis: (1) development of a landscape inventory technique, (2) identification of visual qualities in the landscape and assigning values to them, and (3) application of water and related land planning and management concepts for environmental quality relating to inventory and evaluation data, water management devices, and needs of people to the landscape on a priority basis.

Zwick, David and Marcy Benstock. Water Wasteland, New York: Grossman Publishers, Inc., 1971, New York: Bantam Books, Inc., 1972, 494p.

Ralph Nader's study group report on water pollution.

ADDITIONS

Cicchetti, Charles J. "The Wrong Route," Environment, Vol. 15, No. 5, June 1973, pp. 4-13.

Oil companies continue to press for the Trans-Alaska Pipeline even though an alternate route through Canada would yield more profits to them, produce more tax benefits for Alaska and the federal government, deliver the oil where it is needed most, and do less damage to the environment. The author presents economic comparisons between the Alaskan route and the Canadian alternative based on a study he made for Resources for the Future of the pipeline controversy. He concludes that the consequences of a TAP-tanker system for transporting Alaskan oil "could haunt an entire continent for many years to come."

Hirst, Eric. "The Energy Cost of Pollution Control," Environment, Vol. 15, No. 8, October 1973, pp. 37-43.

An unanswered question concerning various environmental protection schemes is what effect their implementation has on national energy use. This report examines energy requirements for a number of protection strategies and compares these requirements with present energy consumption. Results of this study indicate that the potential total energy needed for environmental controls would be small and could be almost completely balanced by compensating energy-saving tactics such as redesign of automobiles, greater use of mass transit, incineration of solid wastes to generate electricity, and more resource recovery. Thus, present energy growth rates cannot be attributed to operation of environmental protection systems, coincidentally meaning that environmentalists are not responsible for the current energy crisis as the Nixon administration has recently hinted.

Kreith, Frank. "Lack of Impact," Environment, Vol. 15, No. 1, January-February 1973, pp. 26-33.

The Environmental Impact Statement process is burdened with difficult problems. Congress has provided neither the money nor the legal power to implement the impact statement procedure. It would appear that the impact statement requirement as now being implemented in government decision-making is not a very effective tool in protecting environmental quality. Investigations to date indicate that NEPA has not resulted in major changes or proposed programs.

C. Listings by Lawrence Stahn

Cotner, Melvin L. and Louise N. Samuel. "Competition for Land Resources," Contours of Change: The Yearbook of Architecture, 1970, pp. 204-212.

At present, the more efficient use of our land is counterbalancing the population increase, despite the competition for some resources and unwise use of others. However, as different land use needs are not met, we can expect increasing competition for land in some areas. The emerging problem concerns how we use our land resources. Questions now center on the quality of the service and products coming from our land resources. The health and welfare of the population will be greatly affected by where new urbanization takes place. Traditionally, farmers have been concerned with conservation of the soil and the use of the land. But as more land shifts from rural to urban uses, some of the responsibility for conservation also shifts from the farmers to the urban residents, developers, and industrialists.

Delaware River Basin Commission. Interstate Planning for Regional Water Supply and Pollution Control, November 1971.

This report presents the results of a study of the problem of water supply and waste disposal in the three-State, six-county region in which the Tocks Island Reservoir and the Delaware Water Gap National Recreation Area are being developed. The report presents various alternatives for water supply and waste disposal in the 1,000 square mile drainage area of the Tocks Island Reservoir. This region is presently undergoing rapid growth.

Environmetrics, Inc. The River Basin Model: An Overview, prepared for the Office of Research and Monitoring, Environmental Protection Agency, December 1971.

The River Basin Model is a man-machine model that can be used to represent in a suggestive fashion the interactions that take place within a real or hypothetical regional area between the local water system and the economic, social, and governmental sectors of that area.

Forest-Range Task Force, U. S. Department of Agriculture. The Nation's Range Resources - A Forest-Range Environmental Study, Forest Resources Report No. 19, December 1972.

A system was developed for categorizing the forest and range area of the 48 conterminous U.S. into major ecosystems. These ecosystems were divided according to ownership, productivity, and condition into resource units, land area determined, and 1970 grazing production and 21 other outputs estimated. An analytical system was developed with a minimum cost objective function and used to suggest management mixes to achieve national goals for forest-range livestock production at minimum cost when modified by environmental and social considerations.

National Association of Counties Research Foundation. Urban Soil Erosion and Sediment Control, prepared for the U. S. Department of the Interior, Federal Water Quality Administration, May 1970.

This report determined the causes and the extent of urban and suburban soil erosion and sediment problems, and described ways in which local communities can organize and implement effective sedimentation control programs. An evaluation is provided on the state-of-the-art of urban sedimentation control, and a series of research needs in the sedimentation field is cited. In addition, this report includes the "Community Action Guidebook for Soil Erosion and Sediment Control" which describes methods by which local governments can organize and implement sedimentation control programs.

National Water Well Association and U. S. Environmental Protection Agency (cosponsors). Proceedings of the National Ground Water Quality Symposium, August 25-27, 1971.

The purpose of this report was to focus public and scientific attention on the broad and basic ground-water pollution problems, either present or developing. With surface water resources decreasing in both quantity and quality, ground water, as the primary alternate supply, must be protected where it is pure, and improved where it is not.

Partain, Lloyd E. "Enough Land for Tomorrow," Contours of Change: The Yearbook of Agriculture, 1970.

It must be realized that as competition for land and water increases, food and fiber will always have first claim upon these resources. Using farmland indiscriminately for purposes other than farming can prevent us from producing enough food and fiber. By doing more research and using resource management and conservation practices on land, including water wisely, we can be sure of meeting the increasing demands on our resources. In view of resource demands, the article continues, our future depends on policies and programs for conserving, developing, and managing soil, water, forests, and related resources. To best satisfy the interests of all people concerned, resource management must be considered fully in community, area, regional, and national development plans and actions.

Power, Garrett. Chesapeake Bay in Legal Perspective, prepared for the U. S. Department of the Interior, Federal Water Pollution Control Administration, March 1970.

The Chesapeake Bay is a major east coast interstate estuarine area which has many legal and management characteristics which exist in other estuarine areas of the United States. This report describes the historical development and resulting complex, interacting legal framework at the Federal, State and Local levels.

Graduate School of Business Administration, U.C.L.A. Mathematical Programming for Regional Water Quality Management, prepared for the Department of the Interior, Federal Water Quality Administrator, August 1970.

This report is an application of a non-linear programming algorithm to the problem of optimal water quality control in an estuary. The mathematical model that was developed gives the solution to the general mixed case of at-source treatment, regional treatment plants, and by-pass piping. Detailed results are presented for a pilot problem to illustrate the method of solution. The results indicate that a regional treatment system for the Delaware Estuary is superior to other proposed schemes.

Jones, Ralph T. Meeting Indiana's Environmental Protection Needs: Organization and Staffing Requirements, prepared for Region V Environmental Protection Agency, November 1972.

The objectives of this study were to determine the manpower staffing requirements for the State of Indiana's environmental protection functions, determine the most efficient and effective organizational structure for the State's environmental protection programs and review and comment on the adequacy of Indiana's current legislative authority for comprehensive environmental protection. Subsequent to objective discussion, recommendations are also given.

Landscape Architecture Research Office, Graduate School of Design, Harvard University. Visual Values for Highways, Volume 1, September 1970.

This report dealt with the identification of characteristics having visual and esthetic merit in the highway environment and the many possible interrelationships or interdependencies of these characteristics as variables in highway planning and design. Techniques were devised to identify the relative merits of visual characteristics on a comparative basis and to predict how they might influence improved driver perception and performance.

Mackenthun, Kenneth M. The Practice of Water Pollution Biology, prepared for the U. S. Department of the Interior, 1969.

This document presents some practical water pollution biological field investigative techniques and practices, procedures to solve problems, data analyses, interpretation and display, and the development and writing of the investigative report. It is written principally for the biologist experienced in these activities, and for sanitary engineers, chemists, attorneys, water pollution control administrators, and others. This report considers the many aquatic environments, their biotic constituents, and the effects of various pollutants upon them.

St. Clair - Detroit Air Pollution Board and Cooperating Agencies, International Joint Commission, Ottawa and Washington, D.C. Joint Air Pollution of St. Clair - Detroit River Areas for International Joint Commission Canada and the United States, January 1971.

The governments of Canada and the United States in considering the matter of air pollution, decided to extend the geographical area of consideration to include Port Huron-Sarnia and Detroit-Windsor because of complaints. The work undertaken was air quality measurements on both sides of the international boundary, meteorological measurements, an inventory of atmospheric emissions of pollutants emanating from all sources, and a study of the effects of air pollutants on selected vegetation and materials. In addition to pollution from transboundary flow of air pollutants, certain areas in both countries are experiencing levels of air pollution in excess of their air quality standards because of sources located in their respective jurisdictions. Costs of implementing remedial measures were also determined.

South Central Regional Advisory Committee, West Central Regional Advisory Committee and West Regional Advisory Committee. The 1970 National Power Survey Federal Power Commission Part III, 1970.

This report sets forth certain statistical data and also information covering operating practices of individual power systems and the coordination which has been achieved between systems, as well as projecting the availability of resources, the growth and future plans of all segments of the electric utility industry in the South Central, West Central and West Regional regions.

Stamp, Patricia L., compiled by. Solid Waste Demonstration Projects, proceedings of a Symposium in Cincinnati, May 4-6, 1971, prepared for the U. S. Environmental Protection Agency, 1972.

This document provided status reports on projects considered to offer the best potential for solid waste management. The projects and studies discussed range from descriptions of a mechanized collection vehicle that uses a telescoping arm to empty refuse containers to descriptions of full facilities for converting waste to useful products, as reclaimed materials or power.

School of Forestry and School of Engineering at Oregon State University. Studies on Effects of Watershed Practices on Streams, prepared for the U. S. Environmental Protection Agency, February 1971.

The purpose of this book was to describe the long-term effects of clearcutting timber on small streams, to present a practical technique for estimating the maximum change in temperature that would result after the shade has been removed from forest streams by clearcutting, to ascertain the way heated streams lose heat as they flow into forests from a clearcut and to discover the effect of road building, clearcut logging, and slash burning on suspended sediment production from three forested watersheds.

Toftner, Richard O. Developing a Local and Regional Solid Waste Management Plan, prepared for the U. S. Environmental Protection Agency, 1973.

This publication describes the basic features of the planning process and how a local or regional agency may use these in developing a solid waste management plan and in determining the way to early implementation of its plan. The document states that all comprehensive solid waste management plans should adopt a sound planning process, establish a management system, apply the techniques and knowledge from the best of organizational theory, coordinate plans with other governmental agencies, integrate the solid waste plan with comprehensive areawide plans and develop sound action programs.

U. S. Environmental Protection Agency. Aircraft Emissions: Impact on Air Quality and Feasibility of Control.

This report presents the available information on the present and predicted nature and extent of air pollution related to aircraft operations in the United States. In addition, it presents an investigation of the present and future technological feasibility of controlling such emissions.

U. S. Environmental Protection Agency. Institutional Arrangements for Water Quality Management Planning, September 1971.

This report examines the impact of the unified HUD/EPA Water Quality Management Planning Guidelines on the planning efforts of several states with particular regard to institutional and intergovernmental arrangements in State, river basin and regional planning. The report identifies the status and current problems of the water quality management state planning programs and presents recommendations for the alleviation of the problems.

U. S. Environmental Protection Agency. National Capital Region Water and Waste Management Report, April 1971.

The report contains findings from special studies of problems in providing adequate water, sewerage, sanitation, and related services in the Washington metropolitan area. The conclusion was drawn that there is a fragmentation of authority, responsibilities, and capabilities to cope with the major water and waste management problems in the Washington metropolitan area. The report points out the need for attacking these problems on a region-wide basis, and identifies a number of alternatives for doing this.

U. S. Department of Agriculture. Environmental Thrust Handbook, September 1971.

Some 22 projects are outlined as potential environmental thrusts at the community level. They include projects with titles such as Safe Drinking Water, Land Use Planning, Improving Recreational Resources, Noise Reduction, and Pesticide Safety. The purpose of this handbook was to suggest project improvements in communities which are already underway and to offer ideas for new and additional ones so as to help people improve their environment. At most, the discussion of any one project is two pages in length. Project outlines briefly discuss the situation and problem of each environmental thrust, the basic objectives of a local program, suggested steps and procedures which the community might take to accomplish objectives, criteria for evaluating effectiveness, and the federal agencies that are ready to assist in the respective environmental improvement areas.

U. S. Department of Agriculture, Economic Research Service, Planning Natural Resource Development: An Introductory Guide, Agriculture Handbook No. 431, 1972.

This document describes principles for making rational decisions on the scope and content of natural resource development programs. It contains five main parts which correspond to phases of resource planning. The first part outlines concepts and procedures for selecting feasible components of development programs. The second part sets criteria for identifying an array of feasible project proposals. Methods are then explained for formulating preliminary programs. The concluding sections examine the preliminary programs for possibilities of integrating program purposes.

Viets, Frank G., Jr. "The Mounting Problem of Cattle Feedlot Pollution," Agricultural Science Review, prepared for cooperative State Research Service, U. S. Department of Agriculture, First Quarter, 1971, Vol. 9, No. 1, pp. 1-9.

The increasing demands for well-finished beef and the apparent profitability of large integrated feeding and slaughtering operations indicate that feedlots will grow larger. As a result, we have never experienced such a concentration of wastes on so small an area. Feedlot operations have expanded faster than the knowledge that could help them. The problems that we are confronted with include runoff, ground water, and air quality deterioration. Underground water pollution is mostly a local problem. Most of the unresolved problems lie in air pollution and consists of odors, dust and ammonia. The only solution to the problem is to return the solid waste to the land in sufficient amounts for near maximum production of crops.

Western Environmental Research Laboratory. Proceedings: Environmental Quality Sensor Workshop, November 30-December 2, 1971, Las Vegas, Nevada, prepared for the U. S. Environmental Protection Agency, Office of Monitoring, January 10, 1972.

There is an immediate requirement for utilization of remote and automated in situ sensors for monitoring environmental quality. The purpose of the document is to acquaint one with some of the latest state-of-the-art techniques for sensing pollutants. Monitoring the environment is a key to effective management for environmental quality. It is nearly impossible to detect environmental changes, desirable or undesirable, without established base lines and repeated observations.

Whyte Laboratories. Community Noise, prepared for the U. S. Environmental Protection Agency, December 31, 1971.

This report addresses the part of the overall noise pollution problem which is associated with outdoor noise in the community. It attempts to provide a quantitative framework for understanding the nature of the outdoor noise environment and reaction of people and community to its various aspects.

V. TRANSPORTATION-COMMUNICATIONS APPROACHES

A. Listings by David P. Millard

Shapiro, Paul S. Communications or Transport: Decision-Making in Developing Countries, 1967, MIT.

In this paper the author makes comparisons of the uses of investment in transport and in communication for developing countries. A method for investment decision-making is proposed, and relevant data is presented and analyzed. The author hypothesizes that the goals of transport and communication are substitutable or at least complementary. These goals include modernizing images, attitudes, and behavior, fostering political integration, promoting economic growth and advancing education. He then sets out to prove his hypothesis. In conclusion the author discusses the problems of providing communication equipment at low cost, and the need for trained personnel.

Environment for Man: The Next Fifty Years, edited by William Ewald, Jr., Ch. 4, Christopher Alexander, "The City as a Mechanism for Sustaining Human Contact."

The author first defines his meaning of contact and then proceeds to describe the different types of contact. Part 1 is devoted to intimate contact, Part 2 to the social pathologies of urban areas, Part 3 to the autonomy-withdraw syndrome, and Part 4 to a design to alleviate this syndrome.

Comments by H. P. Overlander, P. Thiel and R. F. Wehrli.

Report of the Interdisciplinary Telecommunications Policy Group.
VPI & SU under grant from National Science Foundation,
Research Applied to National Needs (RANN).

The basis of this report is devoted to the area of Cable Television public and governmental access channels. Subjects to be studied are legal aspects, local government interaction, telecommunication-transportation trade offs, extension education, remote computer access to public schools, and data networks. This report mainly raises questions to be answered in subsequent reports.

Pilditch, James. Communication by Design: A Study in Corporate Identity, McGraw Hill, 1970.

This book attempts to describe how communication by design can help the relationship between industry and its publics. Each theory presented is backed up by practical case histories.

Data Communications in Business, edited by Edgar C. Gentle, Jr.,
AT&T, 1965.

This book presents the fundamental ideas involved in developing effective uses of data communications. Also this book provides an insight into the way the administrators of business, industry, education, and government benefit from integrated information systems.

Groombridge, Brian. Television and the People-A Program for Democratic Participation, Penguin Education, 1972.

The theme of the book is TV's present and potential role in the creation or frustration of a participatory democracy. The author asserts that TV is a major educational force in our society and he criticizes TV's present state as an educational force. He lays down a prescription for the development of a new kind of educational TV.

Stormes, John M. Television Communications Systems for Business and Industry, John Wiley and Sons, Inc., 1970.

The author says the purpose of this book is to help people understand how a TV works, the ways in which it can be applied to problem solving and TV's limitations. The book is oriented toward planning with suggestions for ways to discover new potentials.

Kline, F. S. and P. J. Tichenor, editors, Vol. 1, Current Perspectives in Mass Communication Research, Sage Publications, London, 1972.

A status report on work currently attracting the attention of mass communication research workers. Also provides a context for research perspectives by applying them to some serious problems facing American society.

"A Regional Data-Processing Center," A. O. Atkinson, American City, 84: pp. 91-92, July 1969.

The author points out that due to rising computer requirements and tighter budgets, municipalities must combine efforts through area wide computer sharing. Paper subject Region Computer Center of Cincinnati/Hamilton County, Ohio.

Databanks in a Free Society, A. F. Westin and M. A. Baker,
New York: Quadrangle Books, 1972.

This is a report of a study team headed by Mr. Westin. The study includes a look at Bankamerica, T.R.W. Credit Data Corp., Mutual of Omaha, and R. L. Polk and Co. Also discussed is the Social Security Administration as one of the pioneers of computerization.

"Communications," J. McLaughlin, America, 122: pp. 16-18,
January 10, 1970.

An informal discussion of communications in the 70's. An overview of the use of computers, CATV, and telephone communications. Mr. McLaughlin assesses that we are one-eighth of the way towards a "terminal" society.

Mass Communications and American Empire, H. I. Schiller, New York:
A. H. Kelley, 1969.

In this book the author sounds the alarm to alert citizens against the possible threats to liberty at the hands of the great military-industrial power. The book is a comprehensive look at domestic and international mass communication policy of the United States.

"How 2-Way Cable TV Will Change Your Life," R. Gannon,
Popular Science, January 1973.

A broad overview of the potentials of 2-way CATV. The author also mentions the legal aspects and the planning criteria for future "wired cities."

Friedman, J. "An Informative Model of Urbanization," p. 235,
Urban Affairs Quarterly, Vol. 4, No. 2, December 1968.

The author asks if cities are necessary for the development of national societies. He proceeds to answer it by pointing out that modernization occurs most rapidly where the probability of information exchange is the highest.

The Urban Transportation Planning Process, Organization for Economic
Cooperation and Development, Paris, 1971.

The book contains the minutes of the meeting of OECD convened to assess the state of the art of urban transportation planning process. The author points out that there is emerging a new conceptual approach to urban transportation planning--one which gives increased emphasis to human values. The two papers presented and discussed were "Our Strategies for Transport Planning" by Melvin Webber and "Towards the Maximizing of Urban Transportation Potentials" by Wilbur Steger.

Miller, David R. Urban Transportation Policy: New Perspectives,
London: Lexington Books, 1972.

This book is a collection of essays, most of which were prepared for the Urban Transportation Policy Seminar. The three major topics covered were the general relationships between policy and "the urban transportation problem," examples of the impact of specific urban transport programs, and the relationship between transport policy and other aspects of urban growth and development.

New Approaches to Urban Transportation Needs, Conference:

Institute for Rapid Transit and American Society of Civil Engineers, published by the ASCE, 1971.

Some of the papers presented were "Let's Make the Needs Known so Someone Will Do Something About Them," by L. D. Dahms, "Urban Transportation Needs: Problems and Solutions," by A. E. Brant, "Mass Transit-Panacea for Urban Problems," by E. L. Tennyson, and twelve additional papers.

Blunden, W. R. The Land Use/Transport System, Oxford: Pergamon Press, 1971.

This book is based on lectures given by the author on land use and transport planning. The author uses methods and practices of operations research in developing his concepts. There are chapters on queueing theory and mathematical included in the text. There is also extensive data supplied so that some of the programs can be run and solutions obtained.

"How to Move a Nation: Latest Ideas in Mass Transit." U. S. News & World Report, Vol. 66: pp. 82-84, May 19, 1969.

This article gives an overview of how our transportation problems can be solved, and what attempt the federal and state governments are making to relieve traffic jams. Ideas presented are "mini-car" rentals, door to door transport, commuter runs, elevated tracts, and also "selling" mass transit.

"The Coming Revolution in Transportation," by T. C. Appel. National Geographic, September 1969, pp. 301-341.

A good documentation of prototype vehicles designed to operate efficiently at high speeds carrying hundreds of people. The air cushion land sea vehicle is the first discussed, followed by the SST, with a new design for airports. Three hundred mile per hour commuter trains, individual subway cars, and the Hover craft are also discussed.

"Urban Transportation Tomorrow," by J. Volpe. The American City, November 1969, pp. 59-62.

A look at American transportation problems and what is currently being done, proposals being submitted to meet the people's demands, the goals set by the transportation department of good, clean, efficient, and safe transportation will be met, according to the author.

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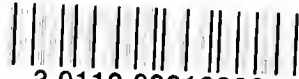
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